

APR 28 1924

Railway Age

FIRST HALF OF 1924—No. 21

NEW YORK—APRIL 26, 1924—CHICAGO

SIXTY-NINTH YEAR

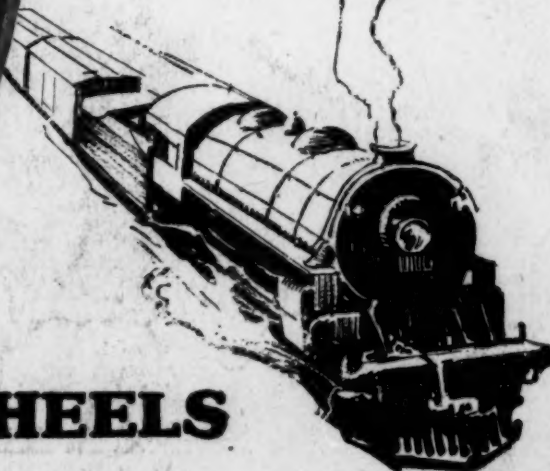
Published weekly by Simmons-Boardman Pub. Co., 30 Church St., New York, N. Y. Subscription Price U. S., Canada and Mexico, \$6.00; foreign countries (excepting daily editions), \$8.00, and \$10.00 a year, including all dailies; single copies, 25c. Entered as second-class matter January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.

AMERICAN STEEL FOUNDRIES

A ONE WEAR STEEL WHEEL



Light Weight
Safety
Large Mileage



DAVIS STEEL WHEELS

NEW YORK

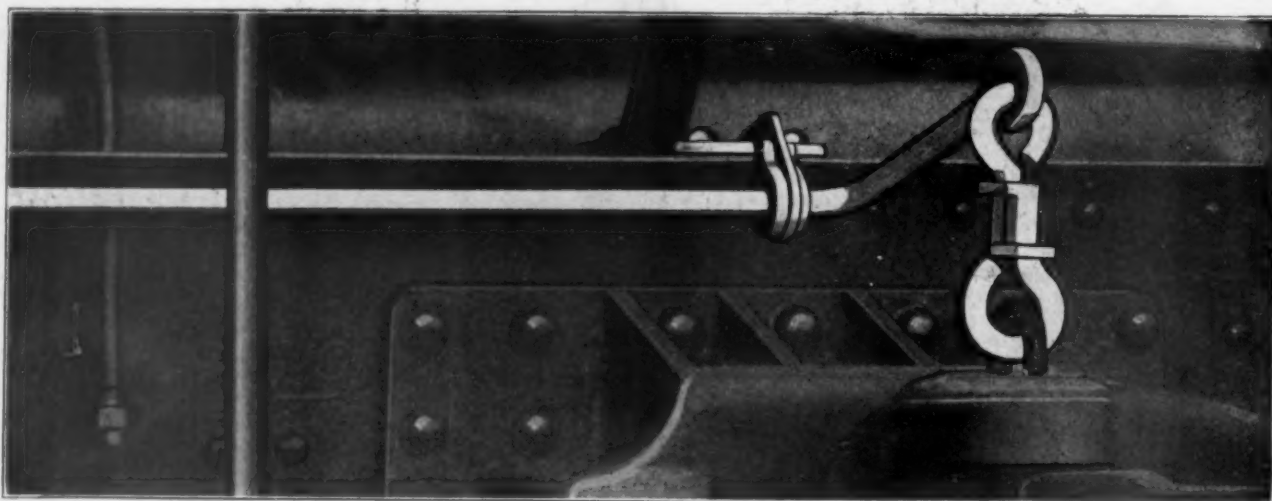
CHICAGO

ST. LOUIS

URECO

COUPLER RELEASE RIGGING

A coupler release rigging of unusual merit because it combines strength, durability, convenience in application, low initial cost and provides highest efficiency



"What you don't have to spend for repairs is profit."

UNION RAILWAY EQUIPMENT CO.

McCormick Building, Chicago, Ill.

Montreal

Richmond, Va.

EDITORIAL

The Table of Contents Will Be Found on Page 5 of the Advertising Section

The recent announcement of personnel and outline of work for the committees of the American Railway Engineering

A. R. E. A. Studies Committee Program

Association directs renewed attention to the perplexing problem which confronts this organization as a consequence of the large number of these technical subdivisions which present reports regularly at annual conventions. With 24 committees having a total membership of 592 the volume of material compiled each year has assumed such proportions that it has become exceedingly difficult to allot enough time in the course of the six sessions of the convention for adequate consideration of each subject presented. This has led to the suggestion that the directors may well consider the feasibility of extending the annual meeting from three days to four. However, this would solve only a part of the problem for, with committee reports covering 1,011 pages of printed matter, as was the case this year, even though a considerable portion of them were in the hands of the members a month or more before the convention, only a limited number of the members have the time, patience or inclination to study the entire subject matter in sufficient detail to prepare themselves for constructive criticism of the reports. Furthermore, a certain proportion of the reports are received so late that the printing is delayed until within a very few days before the meeting. In an effort to correct this situation the Board of Direction has instructed the committees to complete their reports by November 30, with the proviso that any reports turned in after January 1, would be received as progress reports only. This plan would serve to expedite the printing of the reports and thus insure that the members were given ample time to study them before the convention. On the other hand, it would cut down the time of committee work to seven months of the year and exclude from this period the winter months which are probably most favorable for intensive committee work. It is probable, therefore, that this plan will not meet with full favor from the committees.

The goal of 30 car-miles per car day has been achieved. Why not establish another fundamental operation objective—

One Hundred Locomotive Miles a Day

an objective in relation to the performance of the locomotive itself? Prompt turning of power at terminals and expeditious movement on the road are both reflected in the figure for locomotive-miles per serviceable locomotive per day. The average daily mileage of locomotives in actual service can be determined by dividing the total locomotive mileage per day by the average number of locomotives in service excluding those stored, these figures being readily obtained from I. C. C. statistics. For the year 1923, the average for serviceable freight locomotives not stored was 81.5 miles per day. In 1919 this figure was 80.5; in 1920, 89.3; in 1921, 78.1; and in 1922, 79.4. One of the leading coal carrying railroads increased its average mileage for serviceable freight locomotives, not stored, from 71.5 miles per day in 1922 to an average of 80.6 miles per day in 1923. At the same time, this railroad increased its freight car mileage from an average of 23 to 34.9 car miles per car day. When traffic increases,

car mileage will also increase but only to the extent that cars can be moved, and this depends upon the mileage that can be obtained from locomotives in service. It may be said, therefore, that any increase in car-miles per car day to meet a heavy traffic demand is contingent upon a corresponding increase in the number and capacity of serviceable locomotives, or an increase in the average daily mileage of serviceable locomotives. If it is desirable to establish an objective car-mileage per car day it is equally desirable and just as essential to establish an objective for locomotive output as expressed in locomotive miles per locomotive day. Why not establish 100 miles per day as the objective for all serviceable freight locomotives on Class I railroads? The attainment of this goal would assure a far more effective utilization of motive power than at present. The consideration of daily locomotive mileage as an operating objective would also focus attention upon the need for facilities that will enable the railroads to get more mileage from existing locomotives rather than acquire additional locomotives to secure the equivalent output. This applies particularly to locomotive terminal facilities upon which the output of the average locomotive indirectly depends. The extent to which present terminal facilities limit the daily mileage of all freight locomotives on Class I railroads is apparent from the fact that the average locomotive now spends more than two-thirds of each day at locomotive terminals, in roundhouses, etc.

In the relation of privately-owned railways to the state it is generally recognized that the tendency for several decades

Government Ownership on the Wane

has been toward ever greater supervision by the government in matters involving almost every phase of railroad-ing—rates, service, finance, relations with labor and safety. This tendency has not been restricted to the United States, but has also shown itself in practically every country where the railways are owned and operated by private corporations. Now, however, another tendency, of equal significance to that toward increasing governmental supervision of private lines and of even greater strength, is manifesting itself in countries where the railways are owned and operated by the government. This tendency is in the opposite direction. Briefly, it consists of a decided drift away from the ordinary departmental form of government organization for state-owned railways and the adoption of policies and methods similar to those of private corporations. Before the war there were few important government-owned lines which were not organized in much the same fashion as a government department or bureau, with a political minister as their chief officer and with the whole service built up on the customary hard and fast lines usual in civil service. Rates and service were recognized as legitimate machinery for the furthering of the state's economic policy, just the same as customs duties and export subsidies. At the end of the war this concept had not changed materially, as is shown by the reports of the tremendous overstaffing of most of the government railways of Europe immediately after the war in order to provide employment for discharged soldiers. Gradually, however, under the pressure of poverty, these states have come to a

realization that the railways must be made to pay their way and that success in this respect is to be expected only insofar as the railways are removed from the ordinary bureaucratic management and placed in the hands of a directorate resembling as nearly as possible that of a private corporation. A reorganization on that basis has been effected in Austria and Germany and, if the Dawes report on reparations is accepted as outlined elsewhere in this issue, the latter country will go a step further and turn its railways over to a private corporation. In other countries, among which may be mentioned Czecho-Slovakia and Italy under the Fascist regime, much is being done to bring the railways up to commercial standards of operation. There is no mistaking the tendency. Government-owned railways are adopting the policies and the organization of privately-owned properties. The question, therefore, may very appropriately be asked: If government ownership can be successful only to the extent that it can imitate private ownership, why have government ownership at all?

Investigating "Railroad Propaganda"

SENATOR GOODING of Idaho has introduced a resolution providing for an investigation of "railroad propaganda." His resolution contemplates an investigation of all the work that has been done and the expenditures that have been made within recent years on behalf of the railways to influence public opinion regarding their business.

Senator Gooding's resolution was introduced some weeks ago. From a railway standpoint it is regrettable that little effort apparently has been made to get it adopted. It is to be hoped that it will soon be passed and that the investigation will be made as promptly and thoroughly as possible. Meantime, Senator Gooding and his colleagues apparently are overlooking the fact that propaganda carried on by the railways is not the only kind of propaganda affecting them that has been and is being carried on. For years much work has been done and much money has been spent in carrying on propaganda to blacken the characters of railway managers, discredit private operation, bring about regulation that would destroy the earning capacity of the railroads, and make government ownership unavoidable. This propaganda against private ownership and management has been carried on by various organizations. It has been carried on very extensively and at great cost by the railroad labor unions. It has been carried on by the "People's Legislative Service" in Washington, of which Senator La Follette is the principal moving spirit. If all the facts about propaganda affecting the railroads is to be disclosed, as they must be if the public is to be given a complete and true picture, the investigation should include propaganda against the railroads and private management as well as in their defense. An investigation which did not include anti-railroad propaganda would be the play of "Hamlet" with Hamlet omitted from the cast.

The reason why it is extremely desirable, from the standpoint of the railways, that the Gooding resolution shall be speedily adopted and the investigation it contemplates promptly made is that the resolution itself is being made the basis of anti-railroad propaganda. Its mere introduction is being assumed by the enemies of private management to be evidence, if not proof, that the railways have carried on propaganda in illegitimate ways and by means of excessive expenditures. Of course, the mere introduction of a resolution is no evidence of anything the railways have or have not done, much less proof of it. Since it has been introduced, however, if it is not passed, this itself will be made the basis for propaganda against the railways, since it will be charged

that it was defeated because the railways were afraid of investigation.

The kind of anti-railroad propaganda that is being based upon the Gooding resolution is illustrated by a "special bulletin" on "Railroad Propaganda, What it Costs, and Who Pays the Bills," which has been issued by Basil M. Manly of the "People's Legislative Service." This service is maintained in Washington by various groups of labor leaders, radicals and socialists. It seems to have plenty of money to spend, although the sources of its funds are not matters of public record. There has been some suspicion, in view of its personnel and activities, that some of its money is derived from foreign sources interested in the spread of the doctrines of socialism and even of bolshevism. It is well understood that a large part of its funds are furnished through labor leaders who originated the Plumb plan for government ownership and employees' management of the railroads, and who are still seeking the adoption of that plan, although they are discreetly silent about their true objective. That one of the purposes of the "service" has been to bring about government ownership of railways there never was any serious question, and all doubt about the matter has been removed by the recent declaration of Senator La Follette in favor of that policy.

In his bulletin on railroad propaganda Mr. Manly cites what he calls "secret documents" which, he says, have "just come to light, and which show that huge funds were raised and spent to secure the passage of the Esch-Cummins railroad law in 1920." These documents, he adds, "relate to a single appropriation of \$1,000,000 expended through the Association of Railway Executives during the latter part of 1919 and the early part of 1920 'to bring to bear on Congress the strong pressure of public opinion throughout the country, to speed up railroad legislation and put on the statute books a sound law that will protect and encourage the transportation industry.'"

The words "secret documents" have a sinister sound, but every well informed man knows that all accounts and records of every kind kept by railroad companies and railroad associations are, by the Act to Regulate Commerce, made subject to the scrutiny of representatives of the Interstate Commerce Commission. Therefore, these documents could be kept "secret" only so long as the representatives of the Commission did not care to take a look at them.

Mr. Manly, in his bulletin, further quotes the following statement which was made in October, 1919, in a report of one of its committees to the Association of Railway Executives recommending a large appropriation for advertising to influence public opinion: "The intelligent use of advertising space, especially in the newspapers, has come to be the accepted and approved method of crystallizing American public opinion on any great national issue." He quotes a recommendation in this same report to the effect that the railways adopt a policy of "*continuous good will advertising for the general education of the public on railroad problems*" for the purpose, among other objects, of "*insuring the continuance of private operation in the future.*" In his bulletin Mr. Manly underscored as if of great importance and significance, the words we have italicized. Could anything have been more wicked and villainous than for a committee to recommend to the railways that they should make "intelligent use of advertising space" "for the general education of the public on railroad problems," and especially to insure "*continuance of private operation in the future*"? The continuance of private operation obviously is dependent upon fair regulation. How the railways will be regulated will always depend upon public sentiment. Public sentiment necessarily depends upon how the facts about the railroad business are presented to the public. The facts cannot be presented without work and the expenditure of money. Therefore, to those who desire to destroy private ownership, it naturally seems a

crime that the railroads should spend money to present the facts about their business to the public. Those who desire the defeat of the propaganda for government ownership will regard the matter differently.

The "secret documents" cited by Mr. Manly show that late in 1919 the railway companies raised a fund of one million dollars to carry on an advertising campaign through newspapers, large and small, throughout the country, presenting the facts about the railroad situation and urging the return of the railways to private operation under constructive legislation. He asserts that "these assessments for propaganda to influence legislation were charged against operating expenses" and that this is a fact "of peculiar interest to the American people because of this they are made to pay in freight and passenger rates the cost for passing legislation inimical to their interests." This statement is almost wholly false. When the assessments were made, the railways were being operated by the government and in consequence practically all, if not all, of the money was paid by the companies from corporate funds derived from the rentals they received from the government for the use of their properties, and therefore not charged to operating expenses. Furthermore, while the fact is of no great importance, it is a fact that the expenditure actually made for advertising was actually less than a million dollars—being only about three-quarters of that amount.

Anybody who passes judgment upon whether the railways were justified in making a large expenditure late in 1919 and early in 1920 for public relations advertising should recall the conditions that existed then. The railways were being operated by the government. They were incurring a huge deficit because rates had not been advanced enough to cover increases in wages and other operating expenses. Public sentiment had practically settled that they would be returned to private operation, and it was necessary to create a sentiment that would endorse and require large advances in rates, or every railway company, on the return of its property to it, would be immediately bankrupted. The railway labor unions were spending large amounts of money in carrying on a nationwide propaganda for the Plumb plan of government ownership and employees' management. Former Director General McAdoo and others were carrying on propaganda for an extension of five years in the period of government control. The railway companies and the nation were confronted with the most acute crisis in the history of railway transportation in this country. If the railway companies had not at that time put forth every legitimate effort and made every reasonable expenditure to so influence public sentiment as to defeat the propaganda for the Plumb plan and for an extension of the period of government operation, they would have been recreant to their duty to their security owners and to the American public.

We hope that a Senate Committee will thoroughly investigate and make public the use that was made of every penny that was spent by the railway companies for "propaganda" in that crisis. The railways individually, and through two committees representing them by groups have since spent additional sums of money for the same purpose. The Senate Committee should gather and make public full information regarding these expenditures also. The giving of publicity to this information will render it impossible to exaggerate the expenditures that have been made and show that it has all been spent legitimately and for proper purposes.

Meantime, the railways should not allow the agitation about their "propaganda" to frighten them or cause them to curtail the work they are doing for the education of public opinion. If they had not done this work, public sentiment regarding railway matters would be much less fair and intelligent than it is. Furthermore, if the radicals and socialists of the "Peoples Legislative Service" and other

similar organizations were not attacking the railways for the "propaganda" carried on by them, they would be attacking them for something else. They would be engaged, as they have been for years, in disseminating gross misrepresentations of railway management. The only difference would be that their misrepresentations would be more readily and widely believed than they are now.

Recall the Second Train Control Order

THE ACTION of the Interstate Commerce Commission on March 21 in denying the petition of the carriers for the revision of the train control orders, has brought the train control question to a head. In their petition of March 3, the carriers requested, (1) an extension of time from January 1, 1925, until January 1, 1926, for compliance with the first order; (2) a reduction in duplication of installations of the same device, at great expense, until further experience and experimentation had solved the questions of interchangeability and effect on track capacity, as well as permitting opportunity for the further development of the appliances from their present experimental stage; (3) striking out from the order the provision for approval by the Commission only after an installation is completed; (4) a rehearing respecting the order of January 14, 1924, to the end that this order be annulled. In its order of March 21, the Commission denied all of these requests except to grant a hearing on May 7, to the 42 additional carriers listed in the order of January, 1924 (three of the roads mentioned in this second order having since been exempted).

It is evident from the second order that the Commission now considers automatic train control as a facility of demonstrated practicability, the installation of which will be required on all lines at an early date, for the orders as issued to date require train control to be installed on some 16,000 miles of the principal main lines of the country. That this status of the development of train control is not accepted by the carriers is evident.

The Commission predicated its first order of June, 1922, on the assumption that the ramp type has been developed beyond the experimental stage and that it would meet the needs of the roads. That the carriers have not concurred in the latter half of this opinion, however, is demonstrated by the fact that none of the roads, other than those on which the ramp type was being tested at the time the order was issued, have announced contracts for this type. In fact, all of the more than 20 roads which have announced their selections have chosen some form of induction system as better adapted to their requirements, while six or seven others have road tests of this type in service.

This divergence of opinion between the ramp type and the induction systems, and the refusal of the Commission up to this time to inspect or approve a device unless a complete engine district is fully equipped, has placed the carriers in a difficult position. In spite of these conditions many of the roads have contracted for complete train control installations and by so doing have shown good faith by their willingness to comply with the order of the commission and to develop the art of train control. The efforts of the carriers and the manufacturers to solve this problem by exhaustive study and experiment before making the large investments necessary for complete installations, have necessarily been the cause of delay, considered by some as an evidence of dilatory tactics. However, the fact that the majority of the 49 carriers have awarded contracts for this equipment demonstrates that they are trying to comply with the first order.

In the face of these circumstances the Commission came

out with its second order in January, 1924, requiring 47 of the original 49 roads to equip a second engine district by February 1, 1926, and also requiring 47 additional roads to equip one division by that date. This order includes practically double the road miles specified in the first order. We can see no justification for the apparent haste of the Commission in endeavoring to force these roads to make the extensive train control installations required in this second order. Surely the 49 installations required by the first order should afford ample opportunity to demonstrate the practicability and the relative merits of the different types. The application of these different systems under varied operating conditions is certain to bring out many new requirements and developments, as a result of which it is to be expected that some systems will be changed, others discarded and new ones brought out. To make large expenditures in the face of the present uncertain situation is to risk large losses for equipment which must be discarded.

The Commission should not allow itself to be fairly charged with an attempt to force any particular type of train control on the roads but should follow that course which will lead to the most thorough trial of all types. The most constructive means of fostering the development of train control on broad lines is to annul the second order, that of January 14, 1924, and to concentrate attention for the present on the installations specified in the first order.

Railway Sentiment in Rural Communities

THE *Railway Age* recently has commented upon the increase in public intelligence and the improvement in public sentiment regarding the railroad question which has occurred in most parts of the country. That these changes have taken place there can be no question whatever. But the misinformation and prejudices that have done the railways the most harm have prevailed among the farmers and the people in country towns; and they have been within recent years especially prevalent in rural communities, such as railway division points, the populations of which include a relatively large number of railway employees. Anybody who believes that anti-railroad sentiment has expired everywhere will soon be disillusioned if he spends some time listening to people of all classes in such a community talk about railway matters, especially if it is a western community. He will find that in such communities many of the leading business men and lawyers know approximately the truth about the railroad situation, but that many of the people still have extreme and remarkable misconceptions and prejudices regarding it.

The writer recently spent a few days in a western town in the wheat belt which is a division point on an important railroad. This railroad formerly was notoriously overcapitalized, but a few years ago it was reorganized and a large part of its capitalization was literally wiped out. Since then the Interstate Commerce Commission has placed upon it a final valuation substantially exceeding its total capitalization, but it is still unable to pay any dividends on its common stock. Nevertheless a freight brakeman on this railroad in the presence of the writer and a number of local people, repeated the threadbare statement that if the railroads would "squeeze out the water" they would be able to reduce their rates. The average freight brakeman worked 238 hours a month in 1923 and doubtless about the same number of hours in 1916. His average hourly wage in 1916 was 33½ cents and in 1923 it was 71 cents. Therefore, his average monthly earnings in 1916 were about \$80 and in 1923 about \$170, or 112 per cent more. On the

other hand, the railroad by which this brakeman is employed earned a much smaller net return in 1923 than in 1916.

The increase in the wages of this brakeman and his fellow employees is the principal reason why it is necessary for his railroad to charge higher rates than before the war; and yet, although his labor union is right now seeking—and getting—an advance in the wages of himself and its other members, he was engaged in spreading propaganda in this rural community about "squeezing out the water." Nor was this the only kind of propaganda he was spreading. He told in detail of a purely fictitious case of which he claimed to know personally, in which the management of the railway during the war had deliberately padded operating expenses by employing unnecessary men to discredit government operation. It is a striking illustration of the tendency of many classes of people to believe every kind of misrepresentation of railways that his "watered" explanation of present railway rates was believed by most of his hearers, and that apparently it did not occur to them that the key to the true explanation of the rates could be found in the fact that his own wages had been advanced 112 per cent.

The conversation occurred in the lobby of a hotel. The hotel's "handy man" chimed in and proved to be bitter in his animosity toward the railroads. He cited the "fancy salaries" of railway officers as another explanation of present rates. He was asked to estimate how large a part of the total pay roll of the railways consisted of the salaries of the officers. He "guessed" that they must constitute at least one-third of it. When told that in 1923 the salaries of all officers constituted but 2.7 per cent of the total pay roll he refused to believe it. The brakeman was equally skeptical and when an offer was made to show them the official statistics of the Interstate Commerce Commission regarding all wages and salaries paid in 1923, they characterized them as "gummed up" and refused to look at them.

Another local man who was present and who thought that the profits of the railways were excessive was asked what percentage he believed they had earned on their valuation in 1923. He replied it must have averaged at least seven, eight or nine per cent. When told that for the railways as a whole it averaged 5.1 per cent and for the western lines only 4.57 per cent, he and the other local men present joined in again expressing the opinion that the official statistics were "gummed up."

There is no difficulty in surmising where these people get their misinformation. The brakeman undoubtedly got his from "Labor," the weekly paper of the railway labor unions; and he and other railway employees disseminate it among people with whom they came in contact. Farm papers, such as those published by Senator Capper, and politicians who use the railroad question for political capital, also disseminate it widely. The one charge against the railways which is still most constantly made and most widely believed, and which, therefore, does them the most harm, is that of overcapitalization. Even many business men in cities still believe the railways as a whole are overcapitalized; and in rural communities in the west the belief that this is the case seems to be almost universal.

Perhaps the most remarkable feature of the situation is that railway employees, while seeking advances in wages which already average per hour 126 per cent more than in 1916, persist in spreading propaganda that creates sentiment to the effect that railway rates, from which all wages must be paid, ought to be reduced. The heads of their unions are responsible for their activities of this kind. If the purpose of the leaders in encouraging such propaganda is, as we have always believed, to create conditions which will make continuance of private ownership impossible, the policy may be considered as intelligent from their standpoint. If it is intended to secure maintenance of present

wages, or advances in them, it is stupid to the last degree.

The railways have made a good start in educating public sentiment regarding their business. But in the rural communities in many parts of the country they have made but a start. It is in these communities that radical sentiment toward the railroads always has been most prevalent and has done the most harm. It is these communities that have elected most of the members of Congress who, whether they have known better or not have cast most of the votes for legislation tending to prevent the railways from earning needed profits and to restrict their development. If the railroad problem is to be solved under private management, the railways must devise and carry out methods of better educating sentiment in the rural communities.

One of the fundamental causes of the present railroad situation and railroad problem is that railway officers have too largely concentrated their attention upon service and sentiment at competitive points. The distribution of railway literature in rural communities will do some good, but railway officers of all ranks and classes must give more attention to the needs, the transportation service, and the sentiment of non-competitive and, especially rural, communities. The bulk of the traffic that produces gross earnings is derived from large centers where there is active railroad competition; but most of the sentiment that has in the past shaped railway regulation has been the sentiment of communities where there is little or no railroad competition; and the sentiment that determines regulation in the long run determines the net return the railroads may earn on their total business.

Immigration and the Railroad Labor Supply

THE HEAVY MAJORITIES which were recorded in favor of the drastic curtailment of immigration by both houses of Congress within the last two weeks make it a foregone conclusion that the number of aliens which will be permitted to enter this country from now on will be far less than in the past. The unanimity with which Congress has spoken leaves no doubt that it represents the will of the American people. Because of this fact, it becomes the problem of the railways and other industries to adjust their methods to meet the new conditions. The railways employ a large amount of unskilled labor which they have drawn to an increasing extent in recent years from the ranks of immigrants, particularly for construction and maintenance of way work. With this source of supply shut off the only alternative for the roads is to revise their methods so that they will require fewer men.

The first effect of the curtailment in the number of men admitted to the United States will be an increase in wage rates, both directly for unskilled labor and also because of the increasing proportion of men who will become skilled. This will increase the cost of manual work and will provide a greater incentive for the roads to adopt labor saving machinery for, notwithstanding all other arguments in favor of the use of such equipment, the primary motive is and will continue to be that of economy, and the development and use of such equipment will increase in proportion to the savings which will be effected. These savings will vary in turn with the wage rates and will become greater as the pay of men increases.

Considerable progress has been made by the roads in the use of labor saving equipment in the last few years. However, this development is still in its earliest stages, particularly in maintenance of way work. Approximately 450,000 men are required to maintain the tracks and structures of the

railways in the United States. In a paper presented before the Western Society of Engineers, Chicago, two years ago, Robert H. Ford, assistant chief engineer of the Chicago, Rock Island & Pacific, stated that approximately 360,000 of these men performed work that some day will be done either wholly or in part by mechanical means. That this is no mere conjecture can be demonstrated by a survey of the progress which has been made in other industries. The railways cannot resist this tendency. The curtailment in immigration will increase the necessity for development in this direction, and as progress is made, it will be found that the number of men required will not only be reduced, but the cost of the work will also decrease. Those roads will profit most which are the first to investigate this subject.

Traffic Again Fluctuating Widely

ONE OF THE PRINCIPAL REASONS why the railways were able in 1923 to handle a record-breaking freight business without "car shortages," congestions or delays after the early part of the year was that shippers gave their freight to the roads in unprecedentedly uniform volume throughout the year. Fearing that there would be a car shortage when the peak of business was reached in the fall, many shippers, in the first half of last year, heeded the injunction to "ship early." The railways and shippers expressed much gratification with the results. The policies followed by both, and especially their close co-operation, made it possible for the railways to render the best transportation service in many years, and at the same time to operate more economically than they otherwise could have operated.

The experience both of earlier years, when great fluctuations of traffic resulted in serious congestions and delays, and of 1923, when these were avoided, seems to have been forgotten by many shippers. The movement of freight in 1924 already has shown wide fluctuations, and the seasonal fluctuations of 1924 threaten to become as great as in years previous to 1923 unless more shippers can be aroused to the desirability of "shipping early" and avoiding the usual fall rush.

In the first fourteen weeks of 1923 the difference between the smallest and the largest weekly car loadings of all freight was 168,422 car loads. In the corresponding weeks of 1924 there was a maximum fluctuation of 241,780 car loads, the smallest loadings in any week being 703,269, and the largest 945,049.

The wide fluctuations in the total car loadings this year have been mainly due to extraordinary fluctuations in the shipments of bituminous coal from the mines. In the first fourteen weeks of 1923 the smallest weekly shipments of bituminous coal were 164,089, and the largest 198,686, the difference being only 34,597 cars. In the first fourteen weeks of 1924 the smallest weekly shipments of coal were 123,220, and the largest 211,098, the difference being 87,878 car loads.

Furthermore, the situation with respect to shipments of coal recently has been growing worse. In the week ended April 12 total shipments of coal declined to 121,010 car loads which, with the exception of two weeks during the year of profound business depression, 1921, are the smallest shipments ever reported for any week in many years when no nation-wide coal strike was in effect. Stated in tons, the total amount of bituminous coal loaded in the week ended April 12, 1923, was 10,401,000 tons, while in the corresponding week of 1924 it was only 6,742,000 tons, a decline of over 35 per cent. This was the culmination of a decline in coal shipments which had been going on for nine weeks.

The railways have to move each year a large amount of coal to eastern New York and New England. Shipments

to that territory recently have been 38 per cent less than a year ago. They also have to move large amounts of coal to the Lake Erie ports for trans-shipment by boat to supply the fall and winter needs of the northwest. The season of lake shipping was formally opened during the second week of April. Up to the time of the last report coal dumpings at the Lake Erie ports were running 64 per cent less than in the corresponding part of 1923.

The principal explanation of the abnormally small shipments of coal is "no market." In other words, dealers and consumers are not buying anywhere near as much in anticipation of future requirements as they were last year. The natural result of the abnormally small shipments is a corresponding increase in the number of coal cars that the railways have idle. On April 7 the total number of surplus freight cars in good repair was 278,724, and of these 159,438 were coal cars. This means that about one-third of all the coal cars owned by the railways and in good repair were idle and standing on sidings because there was no coal to haul in them.

The average consumption of bituminous coal in the United States in years of normal business activity exceeds ten million tons a week. Within recent weeks only about two-thirds this much has been produced. If it is not produced and shipped now it will have to be produced and shipped later. It necessarily follows that if the present low rate of production continues for some time there will be an abnormal increase of production and in the demands upon the railways later. This abnormal increase in the demands upon the railroads will cause congestion in the handling of all traffic and abnormal and unnecessary operating expenses that the shipping public will have to pay.

In the interest of all concerned, the best advice that can be given at present with respect to many kinds of commodities, and especially coal, is to "buy now" and "ship now."

Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Camera Trails in Africa, by Martin Johnson. Chapter 1 describes the Uganda Railway, while motorists, hikers, hunters, and photographers will find much of interest in the book. 342 p. Illustrated. Published by Century Co., New York. \$4.

The History of Export and Import Railroad Rates and Their Effect Upon the Foreign Trade of the United States, by Roland Laird Kramer, Assistant Professor of Commerce Transportation, University of Pennsylvania. 120 p. Published by Westbrook Publishing Co., Philadelphia, Pa.

List of Selected References to Material Emphasizing the Economic Aspects of Electrification of Railroads in the United States. Compiled by Library, Bureau of Railway Economics. 20 mimeo. p. Issued by Library, Bureau of Railway Economics, Washington, D. C.

Military Motor Transportation. Prepared at the Coast Artillery School. 414 p. Published by the Coast Artillery Journal, Fort Monroe, Va.

Some References to Material on the Development of Relations Between Railroad Managements and Railroad Employees That Emphasize Co-operation. 55 mimeo p. Issued by Library, Bureau of Railway Economics, Washington, D. C.

Periodical Articles

Adventures in "Housekeeping" on a Railway, by A. R. Pinci. Tourist service on Canadian railways. ". . . The

transportation idea in Canada seems to be to cater to all the people to the extent of their individual requirements, and that is more than is done in the United States, where in certain cases travel is prohibitively high without corresponding facilities." p. 14. Dearborn Independent, April 19, 1924, p. 13-14.

The Comedy of Coal, by Robert W. Bruère. ". . . For the stupidity of hauling coal up and down the country instead of sending energy through pipes and wires, the public pays in high freight rates and passenger rates and in railroad inefficiency generally." p. 809. Century Magazine, April, 1924, p. 803-809.

German Railways and German Public Finances, by R. R. Kuczynski. Journal of Political Economy, April, 1924, p. 137-163.

How to Get Apprentices, by G. A. McGarvey. The Associated General Contractors are conducting a campaign among graduating classes in schools and colleges to attract young men into the building trades. This article points out some of the attractions. Constructor, April, 1924, p. 19-20.

Is Canada Solving the Railroad Riddle? by D. M. Le Bourdais. Discusses the Canadian National System and Sir Henry Thornton. Nation, v. 118: 476-477; April 23, 1924.

Present-day Organization of American Railways, by Francis Henry Budden. With some comparisons with English organization. Journal of the Institute of Transport, April, 1924, p. 279-289.

Shifting of Occupations Among Wage Earners As Determined by Occupational History of Industrial Policy Holders, by Louis I. Dublin and Robert J. Vane. Percentage of shift among railroad workers, p. 38-39. Monthly Labor Review, April, 1924, p. 34-42.

Would Consolidations Lift the Weak Roads up or Drag the Strong Roads Down? by H. Parker Willis. The second of two articles. The first was in the list of March 22. Magazine of Wall Street, April 12, 1924, p. 1030-1031, 1071, 1073-1074.

The Influence of American Business on National Life, by Abbott Payson Usher. "Service is not commonly present in the mind of the business man as a conscious aim, but it is inevitably an indispensable condition of success—Thomas A. Edison, Henry Ford, F. W. Woolworth, John Wanamaker, Marshall Field, C. M. Schwab, E. H. Harriman and J. J. Hill, all achieved their success through the magnitude and quality of the service rendered the community. Whether their talents were diverse and broad or narrowly concentrated upon a single accomplishment, the compass of their achievement has been measured by their capacity for service . . ." p. 261-262. Harvard Business Review, Harvard University, April, 1924, p. 257-267.

The Shipper's Interest in Railway Legislation, by Samuel M. Felton. "A vitally important thing that is constantly overlooked by many people is that there is an indissoluble relationship between the service that the railways can render and the rates they are allowed to charge, and that a relatively small difference in the rates may make a very great difference in the amount and quality of the service they can render." p. 7. Shipper & Carrier, April issue, 1924, p. 7-8, 54.

"Selling the Company," by Jean A. Flexner. A somewhat critical study of the employees' magazine. "When shall we have a corporation publication which states facts, opens its columns to workers, and instead of trying to sell the company to the worker, recognizes the worker as a personality fully entitled to his own point of view and just as fully entitled to express it in the publication that assumes to speak for the 'company,' of which he is an organic part, and for him?" New Republic, April 9, 1924, p. 171-174.



A General View of the Work, Showing a Portion of the Stuyvesant Dock at the Left

Novel Sheet Pile Construction at New Orleans

Illinois Central Uses Bignell Jet Type in Building Levee Wall at the Stuyvesant Dock

By L. M. Arms

Railways Bureau, Portland Cement Association, Chicago

A NOVEL TYPE of concrete sheet piling construction was recently used on a large scale at the Stuyvesant dock of the Illinois Central at New Orleans, La., in complying with the orders of the Board of Commissioners of the New Orleans Levee District. The Stuyvesant terminal is one of the longest docks in the world, having a length of 4,698 ft. fronting on the river. The floors of this dock have been

enough into the old levee to prevent seepage around the bottom at times of high water. With such an arrangement it became necessary to raise the dock floor 18 in. to bring it to the new top of levee and raise the tracks just enough to maintain the normal relation of rail and dock floor levels.

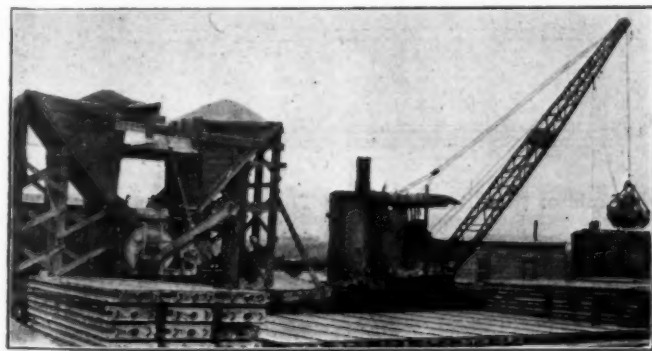
A wooden bulkhead of built-up sheeting has served for a number of years as a protection against wave action for the two wharf tracks at times of high water. This bulkhead was later extended vertically with a concrete curb wall reaching to a sufficient depth to fulfill the rat-proofing requirements ordered by the City of New Orleans. The location originally proposed for the new concrete sheet pile levee wall necessitated the removal of this bulkhead, but a later change in the location of the new wall permitted the old wall to remain in position and to serve its original purpose.

A permanent form of construction was desired in the new wall. However, on account of the immediate proximity of the river, the previous soil and the uncertain foundation, building a cofferdam, excavating and driving piles for a wall of the ordinary type would have been impracticable. After considerable study of the situation a wall of concrete sheet piles with sealed joints and a cast-in-place coping was chosen. Although concrete sheet piles are by no means unusual, this work has some features that make it of special interest.

Each pile is 25 ft. 1½ in. long, 36 in. wide, 10 in. thick, contains 2.14 cu. yd. of concrete and weighs approximately five tons. A groove 4 in. wide and 4½ in. deep is cast on one of the 10-in. sides and a tongue 3½ in. wide and 2 in. high on the other. Each pile is reinforced with 8 longitudinal ¾ in. round bars 9½ in. center to center and 25 horizontal ¾ in. round bars on 12-in. centers, on each side of the pile. Alternate horizontal bars extend into the tongue or into the flanges that form the groove. The minimum covering over the steel is 1¼ in. Two lifting loops were provided in the top of the pile.

Piles Designed for Jetting

The sinking of the piles is accomplished solely by the use of water jets, the water pipes and jets being an integral part



The Connecting Plant and Some of the Sheet Piles

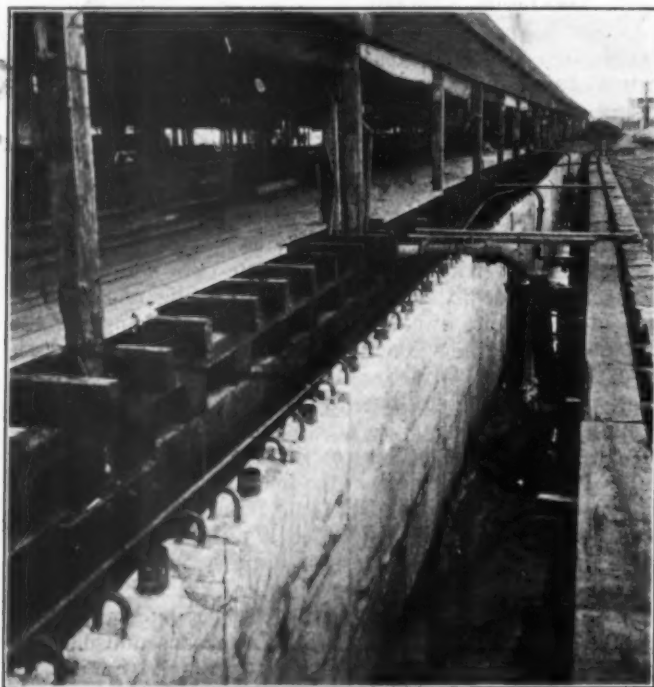
placed in such a position that they are at car floor height with respect to the two house tracks along the land side which are located on the crest of the earth levee which has its river side slope extending under the dock structure. As a result of experience with a flood in the Mississippi river at New Orleans two years ago, it was concluded that the security of the city against inundation during future periods of high water would require the raising of the existing levees to the amount of four feet. To have raised the levee at the dock by filling in under the tracks and down the slope under the building would have entailed enormous expense and involved no little hazard to the dock structure.

Accordingly, the approval of the Levee Board was secured for a plan to build a watertight concrete sheet pile levee wall reaching the new levee elevation and extending far

of the pile. This jetting system, known as the Bignell type, has been largely used for several years in hexagonal piles for foundation work and as anchors for current retards in river bank protection. It is believed, however, that this is the first example of its use in sheet pile construction of the rectangular tongue and groove design.

The jetting arrangement consists of 18 in. of standard 4-in. pipe in the top of the pile for a water supply connection which is attached to the main feed pipe extending through the center of the pile. This is made of 27 gage sheet metal which serves as a form, the pile itself possessing the strength needed to carry the rather high water pressure used. A 4-in. by 2-in. reducer gives a 2-in. jet at the bottom of the pile while side jets, fed from the main center pipe by smaller pipes, have 1/2-in. nozzles. Three of these side jets are located in each flat side of the pile and three in the groove. They are placed 3 ft., 8 ft. and 14 ft. respectively from the bottom of the pile, there being no jets in the upper 11 ft. of the pile.

The railroad, as an experiment to prove the practicability of the design, cast and jetted five of these piles by means of a fixed internal jetting device consisting of a 1 3/4-in. pipe for lateral water feeders and a 2-in. independent pipe for supplying three 1-in. jets placed along the lower end of the pile. The effectiveness of the design was established but, due to the lack of sufficient water pressure and on account of obstructions encountered, some difficulty was experienced in placing the 27-ft. piles at the predetermined depth and the final depths were reached by driving the pile by means of a 2,800-lb. drop hammer. The consensus of opinion was that



Part of the Levee Wall in Place. This View Shows Also How the Floor Was Raised on Blocks

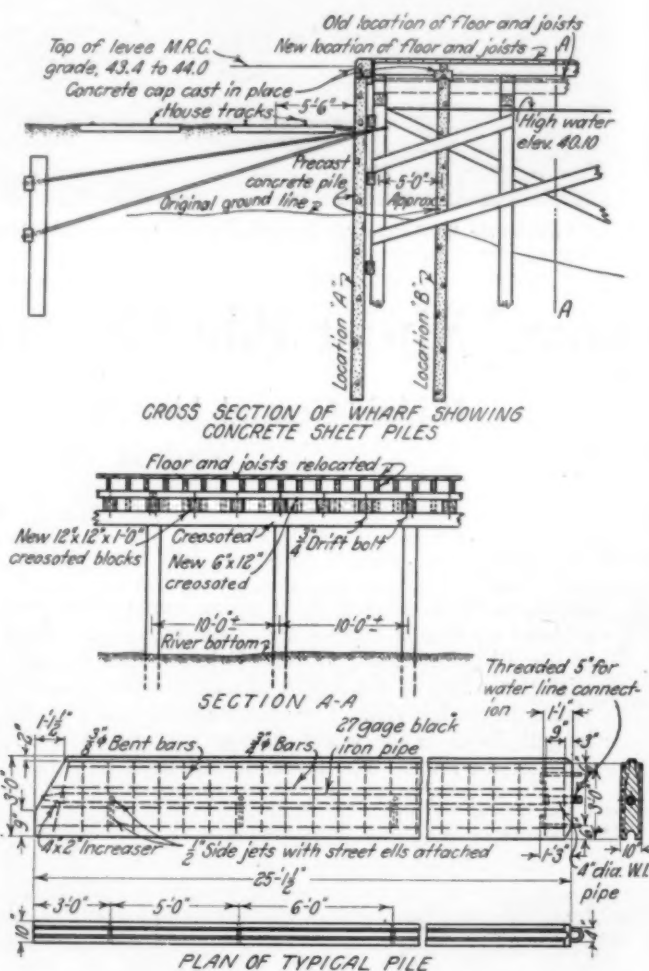
there would be very little trouble placing the piles where there were no obstructions and that where there were obstructions, especially timber, these would have to be cut by a special cutting tool or removed by the open cofferdam method. On account of a change in alignment of the levee wall, the test piles have now been removed and were found to be in very good condition, notwithstanding the fact that they had been subjected to heavy impact when placed.

A battery of forms for 10 piles was built up as a unit on a platform. Reinforcing rods and jetting pipes were tied rigidly in place before concreting was started. The wooden

forms were oiled before each use to facilitate their removal and to preserve them.

Piles Were Built in Batteries

The concrete plant was mounted on a flat car and consisted of a gasoline-driven batch mixer with elevated aggregate bins. A locomotive crane moved this outfit, filled the aggregate bins, and transferred the finished piles from the platform on which they were cast to storage piles. The mixer



Details of the Sheet Piles and Their Position in the Dock

was high enough above the casting platform to permit chuting the concrete directly from the drum without the use of excessive mixing water. A 1:2:4 mix was used. Specifications required a curing period of 60 days, during which the concrete piles were kept damp.

A second locomotive crane was used in placing the piles. Water was supplied to the jets at 150-lb. pressure and the piles were sunk to position rapidly except where obstructions were encountered. Slight obstructions were overcome by raising and dropping the pile. Where occasional obstructions such as logs, old piles, pipes or tie rods caused more trouble, a steel breaker pile, made of a 15-in. I-beam 20 ft. long, was used with some success to break through such obstructions.

This was driven about one foot from the face of the concrete pile with a hammer and after the obstruction had been broken in this manner it was usually not a difficult matter to sink the concrete pile by churning it a few times.

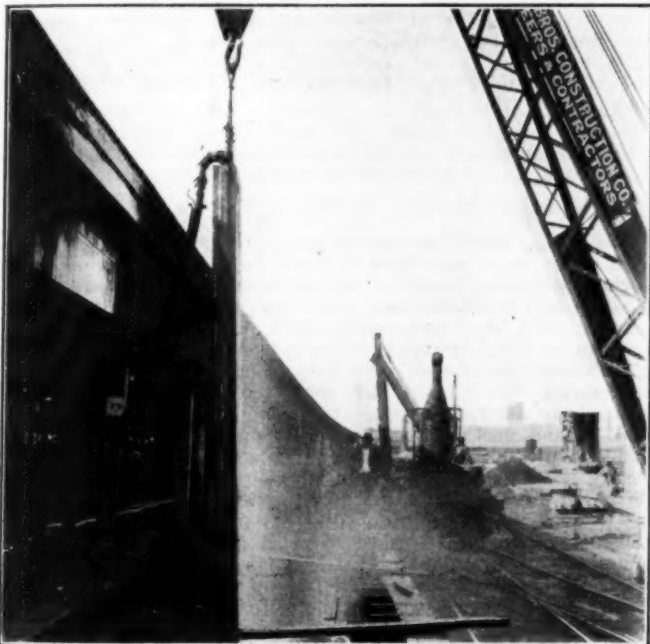
In the most serious cases it is necessary to omit a portion of the wall, build a cofferdam, remove the obstruction and then seal up the gap by building a concrete filler wall in place. Also at each of the 9 fire walls in the building it

was necessary to use a cofferdam in order to place the special details required at those points.

Change Position of the Bulkheads

As originally planned the wall was to be driven at the edge of the overhanging roof but because of obstructions which were encountered at that location it was found desirable to move the wall about six feet toward the river. Some trouble was caused by the limited headroom under the dock roof. Each pile had to be lifted into place in a horizontal position. In some cases trenching was necessary to permit it to be placed in a vertical position. In most cases, however, the jets were effective in clearing away the soft material so as to allow the pile to be swung freely into place.

In order to make the wall thoroughly effective it had to be watertight. Therefore, provision was made for sealing the joints. The groove on one side of the pile is 4 in. wide and $4\frac{1}{8}$ in. deep, as mentioned above, while the tongue on the other side is $3\frac{3}{8}$ in. wide, but extends only 2 in. from the edge of the pile. Thus when the tongue is fitted into the groove a space of $2\frac{1}{8}$ in. by 4 in. was left unfilled. After



Sinking a Pile, the Fog to the Right of the Pile Being Caused by the Spray from the Side Jets

the piles were in place water was forced through a pipe inserted in the groove to clean out all debris. Cement grout was then deposited through the same pipe, which was withdrawn as the opening was filled. This method was also used in filling the jet pipe openings in each pile after it reached final position.

To complete the wall a reinforced concrete coping was cast in place. The lifting loops in the top of each pile served to tie the coping to the rest of the wall.

Raise Floor Eighteen Inches

As mentioned, it was necessary to raise the dock floor 18 in. to bring it above the levee elevation. This was accomplished by removing from service, one at a time, each of the 11 sections into which the dock is divided by fire walls. The old floor and stringers were taken up and the necessary 18-in. raise provided by the use of 12-in. by 12-in. creosoted blocks spaced at 30-in. intervals along the old floor beams and 6-in. by 12-in. timbers laid flat on top of the blocks.

After the blocking was driftbolted in place the old

floor was replaced. Approximately 50 per cent of the flooring and joists were in condition to be re-used, new material being furnished for the rest of the work.

With this construction it is only necessary to raise the levee approximately 18 in. to raise the tracks so that the car floors will be level with the dock floor. At the same time a watertight levee is provided which meets the requirements of the levee commission with respect to both height and impermeability.

Both the design and construction were carried out under the supervision of F. L. Thompson, chief engineer, F. R. Judd, engineer of buildings and C. I. Anderson, assistant engineer of buildings of the Illinois Central. L. S. Marriott was the resident engineer on the job. The contractor was the Woods Brothers Construction Company of Omaha, Neb., which holds the patent rights for Bignell piles in the United States. W. M. Peters, assistant chief engineer, was superintendent on this project.

Freight Car Loading

WASHINGTON, D. C.

REVENUE FREIGHT CAR LOADING during the week ended April 12 showed an increase as compared with the week before after having been declining for several weeks, but it was still 65,972 cars below the figures for the corresponding week of last year. The total was 881,299 cars, as compared with 947,271 last year and 700,155 in 1922. The cumulative total for the year to date, however, is still above that for any previous year. Loading in all districts except the Southwestern was below that for the corresponding week of last year. All classes of commodities also showed decreases as compared with last year except l.c.l. merchandise, which showed an increase of 14,768 cars, indicating a tendency to place small orders for goods. The largest reduction as compared with last year was in coal loading, which has been running light for some time and which in the week ended April 12 amounted only to 127,792 cars. The summary as compiled by the Car Service Division of the American Railway Association follows:

REVENUE FREIGHT CAR LOADING, WEEK ENDED APRIL 12, 1924

Districts	1924	1923	1922
Eastern	218,135	242,403	164,373
Allegheny	187,536	212,729	143,040
Pocahontas	35,356	36,021	35,934
Southern	136,068	143,343	118,565
Northwestern	113,564	118,653	91,059
Central Western	129,327	138,080	99,444
Southwestern	61,313	56,042	47,740
Total Western Districts	304,204	312,775	238,243
Commodities			
Grain and grain products	37,806	39,330	29,658
Livestock	27,777	29,686	24,759
Coal	127,792	182,602	64,171
Coke	11,819	16,014	8,073
Forest products	76,319	77,343	54,800
Ore	14,402	18,293	7,052
Mdse., l.c.l.	253,593	238,825	242,915
Miscellaneous	331,791	345,178	268,727
Total, April 12	881,299	947,271	700,155
April 5	862,096	896,375	706,013
March 29	907,548	936,274	821,808
March 22	908,651	916,818	837,241
March 15	916,953	904,116	815,082
Cumulative total since January 1	13,330,669	13,160,386	11,307,305

The freight car surplus for the roads in the United States increased by over 30,000 during the period from April 1 to April 7, to a total of 278,724 cars, including 87,378 box cars and 159,438 coal cars. There were also shortages amounting to 551 cars.

For the Canadian roads the average surplus was 11,250, including 7,500 box cars, 800 coal cars and 1,100 single deck stock cars.

For the period April 8 to 14 there was a further increase in the surplus to 305,981 cars, including 92,023 box cars and 180,620 coal cars. The shortages amounted to only

248. For the Canadian roads the average surplus was 13,800 cars, including 10,000 box cars and 800 coal cars.

Car Loading in Canada

Revenue car loadings at stations in Canada during the week ended April 12 amounted to 53,091 cars which was a slight decrease from the previous week. Coal loading in the West fell off 545 cars due to labor troubles and forest products showed a decline; also pulpwood in the East decreased 375 cars. Compared with the corresponding week in 1923 the increase was 346 cars. The cumulative totals from the first of this year are 786,453 as against 699,649 for the same period in 1923.

Commodity	For the Week Ended		
	March 29	April 5	April 12
	Cars	Cars	Cars
Grain and grain products	6,432	5,607	5,446
Live stock	2,392	2,371	2,326
Coal	6,288	5,742	5,632
Coke	260	262	176
Lumber	4,068	3,844	4,344
Pulpwood	5,056	3,750	3,373
Pulp and paper	2,207	1,919	1,933
Other forest products	3,048	3,107	2,700
Ore	1,202	1,102	1,311
Merchandise L. C. L.	15,129	15,332	15,099
Miscellaneous	11,763	10,886	10,751
Total cars loaded	57,845	53,922	53,091
Total cars received from connections	38,203	35,693	34,986
Total cars loaded for corresponding week, 1923	46,376	47,930	52,745

Chairman Hooper Proposes Amendment to Labor Law

CHAIRMAN BEN W. HOOPER of the Railroad Labor Board has sent to each member of Congress a letter enclosing a draft of a bill to amend the labor provisions of the Transportation Act which he suggests for the purpose of compelling "the few delinquent carriers and labor organizations to adopt the orderly procedure that has been pursued by all others." The proposed amendments would make mandatory the provisions of section 301a of the Transportation Act which require the consideration and, if possible, the decision of disputes in conference and the reference to the proper board of any dispute not decided in such conference. They would also make it unlawful for any carrier or official thereof to order or consent to any changes in rates of pay or in rules or working conditions without the agreement of the employees or subordinate officials directly interested, unless and until such dispute has been passed upon by the appropriate adjustment board, if there be such, and, on appeal therefrom, by the Railroad Labor Board, or until it has been decided by the Railroad Labor Board in such cases as it has original jurisdiction. It would be made the duty of the representatives of carriers and of employees receiving notice of a dispute and of a desire to confer on it, to specify within 10 days a time and place for a conference within 20 days. Other suggested provisions are as follows:

(d) Any attempted change of rates of pay, rules or working conditions by the carrier prior to final action, as heretofore provided, shall be void, and the offender shall be liable in damages to each and every party aggrieved to the amount of any loss occasioned by such unlawful action. Such damages shall be recoverable by appropriate proceedings in the United States district court for the district wherein the offense was committed, which proceeding may be brought by individuals or by representatives of classes of individuals aggrieved.

Any organization of employees which orders or consents to a strike prior to final action as hereinbefore provided shall be liable in damages to each and every carrier aggrieved to the amount of any loss occasioned by such unlawful action.

The remedy herein provided for both carriers and employees

shall not be construed as depriving them of any other existing remedy in law or equity.

(e) In case a dispute shall arise between any carrier and its employees as to who constitutes the duly authorized and designated representative of the employees, the carrier shall not decide such question of representation, but the employees concerned shall decide the question for themselves by such method as may be agreed upon by the employees, and, in case the dispute is not so adjusted, it shall be submitted to the Railroad Labor Board. A settlement of such dispute by decision of the Railroad Labor Board or by secret ballot taken under its orders shall be binding upon the carrier, and the carrier shall recognize and confer and negotiate with the representatives so selected and authorized. Changes in wages, rules or working conditions arrived at without compliance with this requirement shall not be legal and will entitle the employees to resort to the remedy provided for them in sub-section (d), hereinabove set out.

(f) Nothing in this Act shall be construed to require an individual employee or subordinate official to render labor or service without his consent, nor shall anything in this Act be construed to make the quitting of his labor or service by any employee or subordinate official an illegal act; nor shall any court of the United States, or of any State, issue any process to compel the performance by any employee or subordinate official of such labor or service, without his consent.

Section 2. That section 302 of the Transportation Act, 1920, be so amended as to read as follows:

Section 302. Railroad Boards of Labor Adjustment may be established by agreement between any carrier, group of carriers, or the carriers as a whole, and any employees or subordinate officials of carriers, or organization or group of organizations thereof.

In case a dispute should arise as to the advisability of establishing an Adjustment Board, such dispute shall be submitted to the Railroad Labor Board for hearing and decision.

In the letter Chairman Hooper says:

"The labor article of the Transportation Act, 1920, is predicated upon the sound theory that the American people have too much at stake in efficient and uninterrupted railway transportation to allow railroad managements and men unobstructed freedom to fight out their labor controversies at the expense of the lives and property of innocent people. The act does not, however, undertake to prohibit strikes. It merely provides that a tribunal equally representing the carriers, the employees and the public shall openly hear the full contentions of both parties, render a public decision, and then, if that decision is disobeyed by either party, publish the fact of such disobedience to the people. The only penalty is that of the condemnation of public opinion. And yet, the power of an enlightened public sentiment to prevent strikes and to quell the few that do occur has proven so efficacious that Congress is now being asked to enact a bill that carefully excludes the public from all participation in or supervision over railroad labor controversies and sets up an elaborate and expensive system of five boards, without jurisdiction or power, and without the possibility of bringing to bear a potent public sentiment. Under the proposed legislation, the public would be required to pay enormous sums of money from the federal treasury for the privilege of having its eyes bandaged, its ears stuffed, its voice stifled, and its hands bound whenever a strike is threatened, so that it might never see, hear, understand, speak, or act.

"Those who hold the view that the public has no right to try to prevent transportation tie-ups resulting from strikes can not be reconciled to the Transportation Act, because it does assert such a right in a moderate and conservative way. No board could so function under this law as to please those who condemn the law itself because it throws obstacles in the way of railroad strikes.

"Although the principles underlying the present law are based upon sound public policy, it is not surprising that its execution has disclosed certain weaknesses. None of the defects, however, are inherent in the law itself or in the policy upon which it is predicated. Most of them have been developed by efforts of a small number of carriers to evade certain requirements that seem to have been plainly intended by Congress. In one instance, a similar evasion has been practiced by two labor organizations. The Railroad Labor Board has frequently declared in official orders and decisions its disapproval of such evasions. The representatives of certain of the labor organizations have emphasized these matters before the Senate sub-committee on interstate commerce. It would be a comparatively simple undertaking to meet every meritorious criticism along these lines by amendments to the present law that would compel the few delinquent carriers and labor organizations to adopt the orderly procedure that has been pursued by all others. If this were done, I am sure that the employees in general would be much better satisfied with the law, that very few carriers would complain, and that the interests of the public would be correspondingly subverted."

Effective Date of Section 28 Postponed

Changed to June 20 Following Petition of Various Traffic Associations and Railroad Protests

WASHINGTON, D. C.

THE EFFECTIVE date of the order putting into effect section 28 of the merchant marine act was postponed from May 20 to June 20 by the Interstate Commerce Commission in an order issued on April 19, following a hearing held on April 17 on a petition for a postponement of the order filed by the National Industrial Traffic League, Millers' National Federation, Maritime Association of the Boston Chamber of Commerce, Texas Gulf Sulphur Company and Western Petroleum Refiners' Association. The commission says the additional period should be utilized by the rail carriers in the endeavor to adjust their rate schedules, but it is also thought in some quarters that the additional time allowed may give Congress an opportunity to amend the law or postpone its effective date, as proposed in several bills on which hearings have been held by the House committee on merchant marine and fisheries. The commission's report, after referring to the petition, says in part:

In their petition they stated that the effect of the termination of the suspension of the section would be that export or import traffic moving in foreign bottoms would be denied the benefit of export and import freight rates and charges, and would require the traffic to pay the higher domestic basis of rates in lieu of export and import rates and charges. The petitioners aver that this change, in view of the shortness of notice, will result in heavy losses to American exporters who have made substantial commitments in the sale of goods in foreign countries, based upon the present export rates, and which can be reached only by shipments in foreign vessels. They allege that such American exporters had contracted for tonnage in foreign vessels to move within the next few months, and that their commitments were made with reasonable belief that section 28 would not become effective on such short notice. They recited that the United States Shipping Board had concluded its public hearings with respect to the adequacy of American service about two years before, and had published no report or findings or conclusion with respect thereto.

The petitioners also recited that there was pending in Congress certain proposed legislation looking toward an amendment of section 28 in such way that this section will not become effective until July 1, 1925. The petitioners also averred that their belief that the schedules which the carriers will file in compliance with the commission's order to take effect May 20, 1924, will result in numerous violations of sections 1, 2 and 3 of the Interstate Commerce Act, and that carriers will be unable to take any effective steps to avoid such violations in view of the shortness of time to comply with section 28.

The National Industrial Traffic League takes the position that the certificate of the United States Shipping Board upon which our order of March 11, 1924, was based, is so informal that it is not in compliance with the statute, and affords no legal basis for our action in terminating in part our previous orders of suspension of the section. This contention we do not sustain. We regard the certificate as sufficient to evidence to us the opinion of the board that adequate shipping facilities are afforded by American documented vessels.

Many matters were called to our attention upon the hearing which bore upon the question as to whether in fact the facilities afforded by vessels documented under the laws of the United States were or would be adequate for the transportation of both import and export traffic passing through ports of the United States to the foreign territory indicated. It was urged upon us that the certification by the United States Shipping Board was in effect advisory, and that we possessed jurisdiction and owed the duty to go behind that certificate and determine the facts as to the present and future adequacy of American vessels, as a prerequisite to the exercise of our discretion in terminating or not terminating our previous suspension of the provisions of section 28.

Possible Violations of Interstate Commerce Act

Numerous instances were cited by shippers where it would appear that violations of some provision of the Interstate Commerce Act would result from a compliance with our order in the manner stated by the rail carriers as in contemplation by them, that is, by restricting the application of the import and export rates, and

certain related practices, to shipments moving by American documented vessels. The representative of the rail carriers stated that they had prepared for publication master tariffs, effectuating such restriction in application, which could be filed and posted in time to comply with our outstanding order. However, certain additional complications were developed upon the hearing which had not been brought to their attention, and for which they had no immediate answer. In the application of a master tariff such as indicated, we may expect that there will result many conflicts with provisions of the Interstate Commerce Act, notably the prohibitions contained in section 1 of unreasonable rates, section 2 as to unjust discrimination between persons, localities, and commodities, and section 3 as to undue preferences. Violations of section 4 may possibly result.

The Commission's Duties

In determining our powers and duties in the premises, we must have recourse to the intent of Congress as indicated in section 28 of the Merchant Marine Act, 1920. That expressed intent we must effectuate in spirit as fully and promptly as possible. The wisdom or unwisdom of the policy is not for us to determine. It is clear that Congress intended to and did prohibit the charging or collecting by any common carrier of export or import rates lower than domestic rates for transportation subject to the Interstate Commerce Act of traffic moving to or coming from any port in a possession or dependency of the United States, or in a foreign country, by vessel not documented under the laws of the United States, unless adequate shipping facilities are not afforded by vessels so documented, and then when and as evidenced by the certificate of the United States Shipping Board. The only saving feature as against the application of the prohibition immediately upon the taking effect of the statute is that contained in the provisions of section 28 itself for a suspension of the prohibition by our order, upon such certification by the Shipping Board. Such powers as we possess as to the removal of the prohibition are exercisable only upon certificate by the board. As an administrative tribunal, created by the Congress, we must exercise our powers under section 28 to further the intent of Congress as indicated in that section, and not to halt, delay, or defeat the intent of the law-making body.

We are of opinion that section 28 does not confer upon us any power to review the certificates made to us by the board, or to determine the facts as to adequacy of shipping facilities independently, or otherwise than as certified to us by the board. Congress has delegated to us no power to amend or repeal section 28. Nor has Congress authorized us to substitute our judgment for the opinion of the Shipping Board, as certified to us, in determining, when we act under section 28, whether American shipping facilities are in fact adequate.

The Merchant Marine Act, 1920, does not repeal any provision of the Interstate Commerce Act. The extent to which compliance by a carrier with section 28 may justify acts which otherwise would constitute a violation of the Interstate Commerce Act, we need not here determine. But common carriers subject to the Interstate Commerce Act must also comply with section 28 whenever it becomes effective. Our power under section 28 extends to fixing in our order lifting the suspension of that section such a reasonable effective date as should enable the carriers subject to the prohibitions of that section to comply with both statutes in an orderly way, and to avoid violations of law by bringing their tariffs into conformity with section 28, in so far as that may be done, while observing the mandates of the Interstate Commerce Act.

Upon consideration of the record, including the matters submitted to us at the hearing, we find that the present effective date of our order of March 11, 1924, should be extended from the present date, May 20, to June 20, 1924, and it will be so ordered. This additional period should be utilized by the rail carriers in the endeavor to adjust their schedules so that the rates which will be put in for the purpose of complying with the mandate of section 28 of the Merchant Marine Act will conflict as little as possible with the outstanding provisions of the Interstate Commerce Act, and minimize the disturbance and controversy as to the application of the respective statutes.

Commissioner Potter, in a dissenting opinion, said the order of March 11 should not have been made and that it should be vacated.

T. C. Powell Testifies at Hearing

At the hearing on April 17 T. C. Powell, vice-president of the Erie and vice-chairman of the Advisory Traffic Committee of the Association of Railway Executives, urged the Interstate Commerce Commission to postpone the date "in order to prevent a demoralization of our foreign trade and a reduction in foreign trade movements," for the following reasons:

1. The loss of revenue to the American railroads resulting from the slowing down of the foreign traffic of the United States because of the uncertainty as to the effect of the enforcement of section 28.

2. The diversion of traffic from the American railroads to Canadian railroads and the Canadian ports and to the routes through Canada which will be available on both export and import traffic handled in foreign vessels without penalty.

Mr. Powell said as soon as the Interstate Commerce Commission issued its order the railroads immediately proceeded to make the necessary revisions in the tariffs and regulations to conform thereto and made no protest against either the order or the law. "But shippers and authorized representatives of various ports have protested vigorously against the immediate enforcement of section 28," he continued. "Knowing that confidence is as essential as credit in business and fearing that the present dissatisfaction of a number of shippers will slow down the traffic, the railroads urge a postponement of your order until the dissatisfaction can be allayed and confidence restored.

"I am instructed to emphasize the earnest desire of all the railroads of the United States to encourage and support American shipping, and this is based not only upon patriotic hope that the American flag will be prominent in every port of the world, but upon the belief that real success in developing 'American shipping' will result in a demand for 'American products,' and will create and maintain a steadier market for American labor, and this in sequence will result in a greater buying in this country."

Mr. Powell said that some difficulty has been experienced since the Shipping Board adopted its resolution asking the Interstate Commerce Commission to make no further suspension of section 28, in ascertaining exactly the service afforded by vessels documented under the laws of the United States. He said it is one of the duties of the railroads to post at designated stations schedules of sailings published by the Interstate Commerce Commission but that the commission's schedule does not contain all sailings and it would be impossible for the railroads to prepare a supplementary list particularly as it is not always clear whether companies operating American documented vessels devote themselves exclusively to such vessels.

"With this uncertainty in mind," he said, "we are apprehensive that a premature enforcement of section 28 of the Merchant Marine Act will obstruct and not develop our foreign commerce, particularly at this time when there is a very evident slackening off of business as compared with the large volume of 1923.

Possible Diversion to Canadian Ports

"We also feel justified in asking for this postponement for another reason, namely, the diversion to the Canadian ports and gateways of traffic now enjoyed in part by the American railroads and while this diversion to Canada will not reduce the volume of such export traffic, it will reduce the volume upon which the American railroads depend for their revenues. I think it is idle to say that the application of section 28 will not divert a certain volume of traffic to Canada and will not encourage the manufacturers in Canada at the expense of the manufacturers in the United States.

"Much as it is against our interest to do so, we are forced to interpret section 28 as giving free movement to all traffic to, from or through Canada and a substantial tonnage which the American railroads are now handling wholly within the United States will under the application of the law, be diverted to Canadian routes in order that that limitation shall not apply.

"No producer, or shipper, or purchaser, can be criticised for availing himself of the routes via which there is no uncertainty as to service and rates, and if the Shipping Board contends that section 28 applies to traffic through Canada, while others interpret the law as excluding traffic moving through Canada, this is another indication of the uncertainty which should be dispelled before section 28 becomes effective.

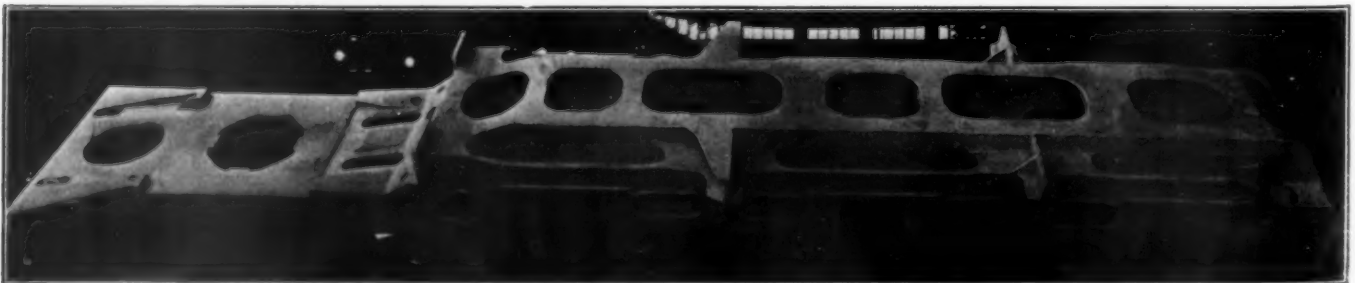
"We are not protesting against the law intended to develop the American merchant marine. We may have some doubts as to the method provided but we are not here to discuss the wisdom of the act. Our appearance here is to ask the suspension of section 28 until the Shipping Board has convinced the business men of the United States that the board has provided service in accordance with the law from all ports of the United States to the ports named in their certificate.

"Frankly, I do not think the board has convinced the shipping public of an immediate adequacy of service, to say nothing of the desirable assurances of certainty, regularity and permanency contemplated in the act."

Declaring the interest which the railroads have in this question is in effect upon their revenues, present and prospective, Mr. Powell said a continuation of any uncertain condition or restriction of the facilities necessary for the development of foreign commerce will tend to concentrate at the seaboard cities the factories producing goods for export or requiring raw material from foreign countries.

Mr. Powell also said that section 28, if placed into effect, would tend to increase the movement of freight for export through the port of New York as against other ports because shippers would naturally seek ports which afford the greatest certainty and regularity of service.

The request of the rail carriers to suspend the effective date of section 28 is not, Mr. Powell said, a request to cancel the law, but to afford an opportunity of educating the public to the belief that adequate shipping facilities, certified to by the Shipping Board (within the limits named), are now afforded by vessels documented under U. S. laws.



Locomotive Frame Bed Cast in One Piece for the New York Central by the Commonwealth Steel Company, St. Louis, Mo.

Claim Agents Study Ways of Reducing Losses

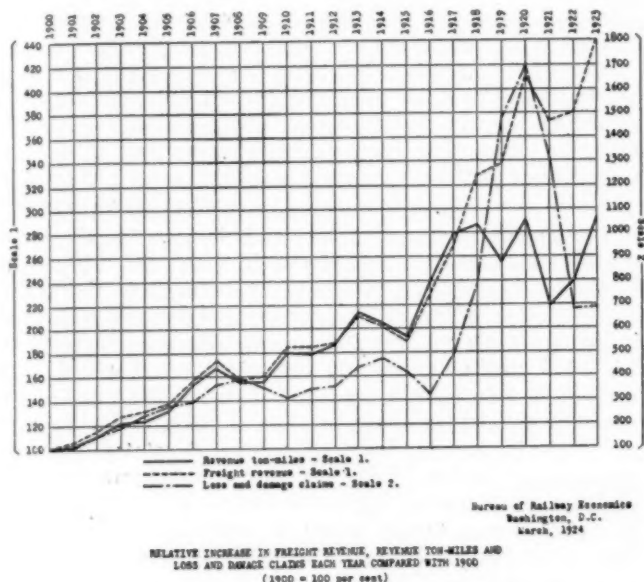
Progress Analyzed and Methods in Successful Use Were Discussed at New Orleans Meeting

THE FREIGHT CLAIM DIVISION of the American Railway Association held its thirty-third annual convention in New Orleans, La., on April 15 to 18, with an attendance of 250. A large number of the members traveled to the convention on a special train which left Chicago on April 13 as the second section of the Panama Limited of the Illinois Central. The consideration of the report of the Committee on Freight Claim Prevention, and the discussion

An Analysis of Freight Claim Payments

The amounts charged to loss and damage during 1923, according to reports received from member lines of the Freight Claim division of the American Railway Association aggregated \$49,540,377, compared with \$48,084,995 for the year ending December 31, 1922. The ratio of freight claim payments to gross freight revenue for the lines in the United States for the year ending December 31, 1923, was 1.05 per cent as compared with 1.2 per cent for 1922. The ratio for Canadian lines was 0.72 per cent in 1923 and 0.91 per cent in 1922. The ratio of claim payments to gross freight revenue reported by 202 individual carriers during 1923 ranged from 0.006 per cent to 3.5 per cent.

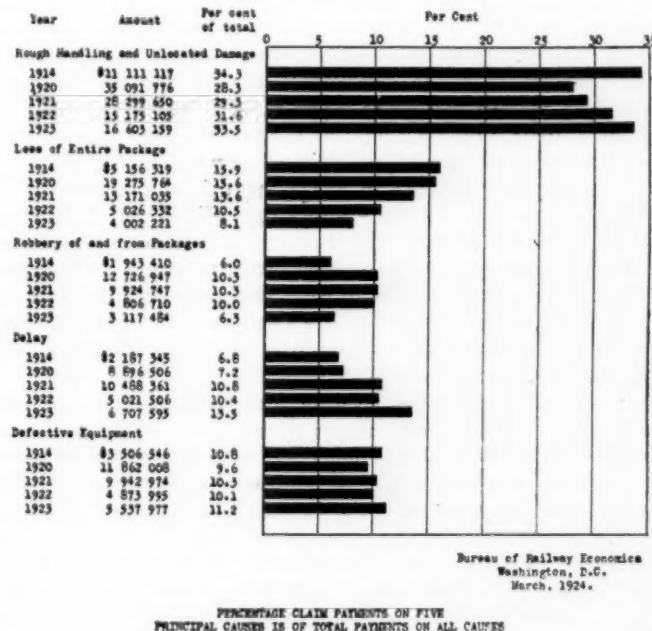
Rough handling and unlocated damage represented more than one-third of the loss and damage account, and fresh fruits and vegetables gave rise to 20.4 per cent of the total, while delays represented 13.5 per cent. Payments for total loss of freight amounted to \$14,779,181, or 29.9 per cent of the total claim payments, compared with 36.2 per cent in 1922 and 40.6 per cent in 1921. Carload loss showed an increase amounting to \$8,010,447, or 54.2 per cent of the total claim payments, compared with 46.7 per cent in 1922 and 42.8 per cent in 1921, while less than carload loss



of carload damages, of damage to fresh fruits and vegetables, of defective equipment, and of the relations between territorial freight claim conferences and the shipping public occupied the major portion of the first two days. The second two days were taken up with general business and the reports of committees on rules. At the morning session of the first day addresses were made by W. R. Scott, president of the Southern Pacific; R. H. Aishton, president of the American Railway Association; W. L. Stanley, vice-president of the Seaboard Air Line, and J. B. Baskerville, chairman of the Freight Claim division.

The election of officers took place on the afternoon of the second day when John F. Horrigan, freight claim agent of the Northern Pacific at St. Paul, Minn., was elected chairman; William B. Kellett, freight claim agent of the Ft. Worth & Denver City at Ft. Worth, Tex., was elected first vice-chairman, and Charles H. Dietrich, freight claim agent of the Chicago, Milwaukee & St. Paul at Chicago, was elected second vice-chairman. Other officers elected were R. L. Calkins, freight claim agent of the New York Central, chairman of the Committee on Rules of Order; W. O. Bunker, general superintendent of freight claims of the Chicago, Rock Island & Pacific, chairman of the Committee on Loss and Damage Rules; J. J. Hooper, general claim agent of the Southern, chairman of the Committee on Overcharge Rules; and Charles H. Dietrich, freight claim agent of the Chicago, Milwaukee & St. Paul, chairman of the Committee on Freight Claim Prevention.

The next annual meeting will be held at Kansas City, Mo., and the date will be set later by the general committee.



amounted to \$6,768,734, or 45.8 per cent of the total, compared with 53.3 per cent in 1922 and 57.2 per cent in 1921. Damage payments increased to \$28,053,601, or 56.6 per cent of the total, compared with 53.4 per cent in 1922 and 48.6 per cent in 1921. Carload damage amounted to \$20,100,385, or 71.6 per cent of the total, compared with 71.7 per cent in 1922 and 68.7 per cent in 1921, while less than carload damage amounted to \$7,953,216, or 28.4 per cent compared with 28.3 per cent in 1922 and 31.3 per cent in 1921. Claims for delay increased to \$6,707,595, or 13.5 per cent of the total compared with 10.4 per cent in 1922. Damage due to rough handling of cars amounted to

\$8,895,212, or 17.9 per cent compared with \$8,246,660, or 17.2 per cent in 1922, an increase of 7.9 per cent over 1922. Damage due to defective or unfit equipment amounted to \$5,537,977 or 11.2 per cent, compared with \$4,873,995, or 10.1 per cent in 1922, an increase of 13.6 per cent. Loss due to improper refrigeration or ventilation showed a decrease of 2.6 per cent, robbery of entire package showed a decrease of 36.6 per cent, robbery of other than entire package 33.8 per cent, concealed loss 6.7 per cent, fire or marine loss or damage 14.6 per cent, and errors of employees decreased 13.1 per cent, while increases in payments due to freezing or heater failure amounted to 3.4 per cent, concealed damage 18.6 per cent, and wrecks 34.6 per cent.

Among the commodities total payments on fresh fruit and vegetables amounted to \$10,098,402, or 20.4 per cent of the total, compared with \$8,830,192, or 18.4 per cent in 1922. The payments on coal and coke amounted to \$3,263,808, or 6.6 per cent of the total, compared with \$2,121,206, or 4.4 per cent, in 1922. Grain payments amounted to \$2,754,565, or 5.6 per cent, compared with \$2,750,113, or 5.6 per cent. Livestock payments amounted to \$2,776,344, or 5.6 per cent, compared with \$2,007,436, or 4.2 per cent in 1922. Payments on new furniture amounted to \$2,085,218, or 4.2 per cent, compared with \$1,742,280, or 3.6 per cent. Commodities showing an increase in payments were glass, glassware and crockery, iron and steel, automobiles and accessories, cement, lime, plaster, etc., lumber and forest products, machinery and hardware and confections.

Report of Committee on Freight Claim Prevention

The report of the Committee on Freight Claim Prevention showed that the activities of the committee during the past year have progressed along the lines of (1) acquainting all interests with the seriousness of the loss and damage problem as a whole, (2) encouraging individual lines to perfect their organizations to maintain close contact with each class of officers and employees engaged in the handling of freight or interested in rendering efficient service to the shipping public, (3) co-ordinating efforts of individual lines, both as between departments and with organizations of other lines engaged in similar work to secure and sustain interest in problems local to each line and territory, and the loss and damage problem of the carriers as a whole and (4) specializing along lines of greatest importance as indicated by claim payments.

Some of the most interesting and effective work in connection with the committee's efforts during the past year have been carried on in connection with the territorial meetings with representatives of shippers and carriers. This plan was inaugurated early in 1923, and involved a program of meetings in the territory of each freight claim conference. In this work the members of the Freight Claim Prevention Committee were joined by members of the general committee of the division, and at each of the meetings loss and damage prevention problems were discussed with representatives of the shipping public. These joint meetings were held under the auspices of chambers of commerce, boards of trade, traffic clubs, etc.

Attention was called to the fact that unlocated damage and rough handling account for approximately one-third of the loss and damage bill, and that 70 per cent of this damage applies to carload traffic. In other words, in 1923 carload claims for damage, the exact cause of which was not ascertained, aggregated \$11,611,875.

Part of this damage may have resulted from loose loading, defective or inadequate bracing, stripping of containers. In this connection it is well to bear in mind that the large bulk of carload freight is loaded by the shipper and unloaded by the consignee. The committee was convinced

that this presents the greatest field for large claim reductions in the future and urged that there is a great need for (a) more extensive and intensive study of destination reports of carload damages with the view of arriving at more definite causes for such damages. Destination employees can be trained to distinguish between causes chargeable to rough handling and other contributing causes, such as loose loading, loose bracing, improper containers, etc. (b) Reports, when properly classified, should be sent promptly to the claim prevention officer of the initial line for remedial measures, in accordance with recommended practice. (c) The committee should be given advice of plans developed for improved loading methods, either from shipper or carrier, in order that such information may be promptly disseminated. (d) This will not only impress upon shippers and carriers the necessity for loading in a manner that will withstand the shocks of modern transportation, but will relieve and encourage the operating department representatives in their efforts to reduce so-called rough handling.

The subject of rough handling has been given special attention throughout the year. Manufacturers of machines for recording rough handling report increased sales during the year, indicating a growing activity on the part of the individual lines in the use of these machines as an aid to supervision in the campaign to reduce or control rough handling.

The amount charged to loss and damage for these commodities amounted to \$8,830,192 in 1922 and \$10,098,402 in 1923. The increase is due to a carry-over of claims from the shopmen's strike of 1922, some of which are still undergoing investigation and adjustment. Records indicate that the 1923 crop of fruits and vegetables was handled by the carriers as free from delay and rough handling as has been shown in many years and the claim account, in due time, will reflect the benefits of this performance. As stated in the previous report, the analysis of individual line reports shows that 20 lines are assuming approximately 90 per cent of the total loss and damage to this group of commodities. These lines have been furnishing special monthly statements during the year, showing the amounts charged to the individual items in the group, from which it is to be noted that six commodities, apples, grapes, peaches, pears, tomatoes and strawberries, based upon comparisons of the loss and damage to total car movement, are causing the greatest trouble. These six commodities move mainly through the spring and summer months. Arrangements have been made for a perishable freight campaign during the months of June, July and August of this year, similar to the one undertaken during 1922.

The committee has been receiving full co-operation from the several inspection bureaus. Reports are now being received showing monthly summaries of destination inspections, divided so as to show the number of cars inspected, commodities involved, causes for damages discovered, etc. This information is being given to the membership in bulletin form. During the week of July 23, 1923, a special course on transit crop diseases, sponsored by the Southwestern Claim Conference, was held at the Agricultural and Mechanical College, College Station, Texas. A résumé of this meeting, including the printed program and other reading matter, was forwarded by your committee to 65 agricultural colleges in the United States and Canada. Many replies have been received indicating interest and containing promises of consideration as a part of the colleges' future activities. The special representatives have since been invited, and have addressed short-course classes at the University of Illinois, Iowa State College of Agriculture, the University of Michigan and Cornell University. In addition to this direct contact your committee is in receipt of many requests from other universities and business colleges for data and information to be used in their class work.

Statistics indicate that approximately 40 per cent of the

loss and damage to fruits and vegetables is chargeable to delay, the greater part of such payments being made on account of a decline in market values, without physical damage to the property. Investigations have developed that, in the adjustment of such claims, there is a lack of uniformity in methods at the larger terminal markets for determining destination values. Efforts are being made to establish through proper representatives of the carriers at such destination points, a system for securing the desired data that will result in the protection of all concerned.

There has been considerable improvement in the packing and loading of eggs, which is reflected in a reduction of 15 per cent in claims paid in 1923, compared with the year before. Your committee is keeping in close touch with all questions pertaining to the safe handling of eggs in transit and is represented on a recently organized committee to direct packing and loading research, composed of representatives of the case and filler manufacturers, the egg trade and railway and express companies. Further experience with the excelsior pad justifies all previous claims for its effectiveness in reducing the risk of transportation damage. A great many large shippers testify that it is the most economical and the safest method of packing eggs which has met with general approval, and as fast as shippers can be converted to the use of six excelsior pads to the case, breakage claims will be reduced proportionately.

Again it is possible to report a large reduction in claims for loss of entire packages, the causes of which could not be determined. These claims, which constituted above 15.6 per cent of the total amount for 1920 and 10.5 per cent for 1922, were further reduced to 8.1 per cent of the whole for 1923, the decrease amounting to 20.3 per cent, or \$1,024,111. The following table shows the improvement made in the accurate handling of l. c. l. freight in the past decade.

LOSS ENTIRE PACKAGE				
Year	Amount	Increase or decrease	Per cent increase or decrease	Per cent of all claims
a1914	\$ 5,156,319			15.9
b1920	19,275,764	\$14,119,445	+273.8	15.6
1921	13,171,035	6,104,729	-31.7	13.6
1922	5,026,332	8,144,703	-61.8	10.5
1923	4,002,221	1,024,111	-20.3	8.1

a As reported to I. C. C. by Class I carriers of the U. S.
b Estimated from reports of 185 carriers.

It will be noted that, despite an increase of more than 50 per cent in wholesale prices since 1914, and a large increase in the volume of merchandise transported, these claims in 1923 were over a million dollars less than in 1914, when they aggregated \$5,126,318.

It is gratifying to report a very substantial reduction in claim payments due to thefts and robberies. Robbery of entire packages amounted to \$1,473,279, a reduction of 36.6 per cent, and robbery of other than entire package totaled \$1,644,205, or 33.8 per cent less than in 1922. Concealed loss claims were reduced 6.7 per cent and claims for unlocated loss other than entire package, in which robbery enters quite largely, were 12.5 per cent less than in the preceding year. The following table shows the improvement made in the robbery situation in recent years:

STATEMENT OF CLAIMS PAID RESULTING FROM THEFTS AND ROBBERIES OF FREIGHT SHIPMENTS REPORTED BY 216 CARRIERS

Year	Property of entire package	Per cent increase or decrease over previous year	Per cent of all classes
a1914	\$ 659,159		2.0
b1920	4,324,691	+556.1	3.5
1921	4,404,770	+1.8	4.6
1922	2,324,881	-47.2	4.8
1923	1,473,279	-36.6	3.0

Year	Robbery of other than entire package	Per cent increase or decrease over previous year	Per cent of all claims
a1914	\$1,284,250		3.9
b1920	8,402,256	+554.2	6.8
1921	5,519,977	-34.3	5.7
1922	2,481,839	-55.0	5.2
1923	1,644,205	-33.8	3.3

Year	Unlocated loss of other than entire package	Per cent increase or decrease over previous year	Per cent of all claims
a1914	\$2,522,271		7.8
b1920	11,244,195	+345.8	9.1
1921	7,534,344	-32.8	7.8
1922	3,284,101	-56.4	6.8
1923	2,874,582	-12.5	5.8

a As reported to I. C. C. by Class I carriers of the U. S.
b Estimated from reports of 185 carriers.

Motion Pictures

As a means of arousing the interest of freight service employees in prevention and educating them in the proper performance of their duties, several roads have been using motion pictures. Their experience has been highly satisfactory.

They have found that the film has many advantages over the spoken word or printed circular. It speaks a language that is understood by all, entertains, and holds the attention of the audience. To a large extent it removes the idea of "preaching" and gives the workman the impression that he himself has discovered the right way to do things.

Other Reports

During the discussion of containers, Edward Dahill, an engineer in the Freight Container Bureau of the American Railway Association, read a paper which showed the number of containers used in 1922 and the advantages gained in the adoption of strapping. An abstract of his paper follows:

From data collected in a countrywide survey conducted by the Freight Container Bureau in 1922 and 1923, and from other sources of information, it has been found that 5,000,000 containers were handled and carried on the railroads of the United States in 1922, of which 2,162,000,000 were used in l.c.l. movement (from l.c.l. data), 1,535,000,000 in carlot movement (from I. C. C. and L. C. B. data) and 1,303,000,000 in express, mail and parcel post movements (estimated).

From this same survey it was computed that in cases in which containers had failed and damage or loss to the contents had occurred, it cost the railroads \$11,500,000 in 1922 for recooperage material, labor and supervision and damage payments.

The use of metal straps and wires on containers increased 100 per cent in a six months' period between the fall of 1922 and the spring of 1923. During the same period the average number of containers requiring recooperage per miscellaneous merchandise car was reduced 50 per cent. The reduction of 34 per cent in claims paid during 1923 for robbery from package is believed to be due to the greater use of strapping.

Suggestions for Eliminating Claims Due to Delay

J. K. Lovell, assistant freight claim agent of the New York Central, read a paper calling attention to loss and damage payments on fresh fruits and vegetables in which delay was the main factor. He analyzed these delays, showing the contributing causes, and offered suggestions for their elimination. An abstract of his paper follows:

It will be noted that notwithstanding a reduction of nearly \$4,000,000 in the total amount paid in 1923 as compared with 1921, the ratio of payments for delay to the total amount paid increased 3.57 per cent, showing the pressing need of active prevention measures if this cause is to be brought into its proper relationship with other causes involved in the handling of this traffic. While delay is charged with 42.53 per cent of the total disbursement during 1923, it is indirectly responsible for a much greater proportion as the opportunity for theft, deterioration, damage on account of defective equipment, rough handling, etc., is

increased in direct ratio to the length of time shipments of fruits and vegetables are in transit.

Analysis of delays shows many contributing causes, among which are delays in filling orders for empty cars, in moving loaded cars from point of origin, in switching to road haul carriers, in road haul movement, in icing, in handling diversions and reconsignments, in making repairs when cars are crippled in transit and in placement at destination.

Extreme care should be exercised in recording requests received verbally, by telephone, or letter for a car or a supply of cars wanted for loading of perishable freight, and agencies should communicate at once with the proper division officers and then follow the matter to see that each requisition made is filled promptly and completely. Early and continued forecasts of crop conditions, together with carefully prepared statistics of previous years' shipments, will aid in perfecting arrangements to care for the current needs. Co-operation on the part of station forces with shippers will generally result in getting the car forwarded on the contemplated train instead of the shipper completing the loading of his car an hour or two after the departure of the train, and necessitating holding it over for a later train. Shippers should also be impressed with the necessity of furnishing shipping instructions sufficiently in advance so that waybills may be issued in time to accompany the cars, otherwise delays on this account are sure to follow.

The time consumed in switching from team tracks or private sidings to road haul carrier, also from one carrier to another at point of interchange and for placement at destination is frequently out of all proportion to the distance cars are moved and many claims presented are directly or indirectly due to this cause. At point of origin the station or yard forces can help very materially by keeping in closer touch with shippers or their loaders and advising them of the necessity for the early completion of loading in order to insure making the desired road haul connecting train. Prompt and regular switching service will decrease much of the hazard due to delay and inadequate refrigeration.

Delays on the road are possibly among the most difficult to prevent for the reason that here the entire work of the operating department is brought into play and detentions result from causes almost too numerous to mention. A few of the reasons offered for failure to make schedule between terminals are: Engine failure, coaling, taking water, hot boxes, broken air hose, crippled cars, defective air line, faulty draft gear, set brakes, trains ahead, held for superior trains, weather conditions, cows or automobiles on the track, etc., in an almost endless chain. The solution of this problem is largely one of efficient management, since every department must function 100 per cent if road delays are to be avoided.

Refrigeration as a means of retarding deterioration is being adopted to a greater extent each year and while a shipper may sometimes be charged with the responsibility because of holding car at shipping point, it should be borne in mind that produce placed in an iced refrigerator car, even though it may finally attain a temperature sufficiently low to check the processes of decay, does not necessarily attain that temperature quickly enough to prevent serious deterioration taking place during the first part of the transit period unless the bunkers are replenished within a reasonable time after loading is completed. When icing is made necessary by detention or emergency, regardless of billing instructions, agents and others concerned should telegraph at once to the proper authority to insure full protection to the property.

A large number of shipments of fruits and vegetables start on their journey with no definite destination in view and are reconsigned or diverted several times under regularly published tariffs. More consideration should be given to an organized system, at divisional and terminal points,

for the handling of diversion orders, inspection for condition of commodity, bracing, etc., prompt switching from hold or team tracks and re-icing to insure against delay.

Crippled cars containing perishable freight should be given immediate attention with the thought of remedying the defect while the car is in the train, if this is at all possible, rather than cutting it out and switching it to the repair track with the consequent delay. Consideration should also be given to the reduction of transfer and invariably resultant damage. This can be accomplished by inspectors or car foremen consulting their superiors to determine the possibility of such temporary repairs as will permit safe handling to destination. If absolutely necessary to transfer, empties for the purpose should be promptly ordered and precooled. Losses can be reduced by widespread diffusion of information on proper methods of transferring, stowing and bracing.

It is not unusual for fruits and vegetables to be subjected to more damaging forces after reaching some of the large terminal markets than are experienced in an entire transportation trip, due to some extent to inadequate terminal facilities, but more so to failure to act promptly on prior delivery orders, as well as inability of consignee to take delivery because of other consignments on hand. On the New York Central a special train despatcher has been placed in the office of the general manager whose sole duty it is to keep tab on the through fast freights and co-ordinate the work of the division despatchers. This man does not take direct charge of any train movement but he is in close touch with the entire situation at all times and the moral influence of this plan is most effective.

Methods for Preventing Overheating

In a paper read by H. B. Meinhardt, supervisor of refrigerator service of the Chicago, Burlington & Quincy at Chicago, methods were outlined for the control of temperature in protection of fresh fruits and vegetables. The following is an abstract of his paper:

Temperature control is the basic factor of all classes of protective service to perishable freight and is most important in the protection of fresh fruits and vegetables from frost damage. Great care should be exercised to prevent overheating, especially in the upper portions of load. The overheating hazard may be materially reduced by having a knowledge of the degree of latent heat in the commodity itself, by seeing that the load is racked up from the car floor away from side walls and ends of car at the floor, and tiers of packages properly spaced, securely stripped and braced so as to preserve channels for the free circulation of air throughout both car and load and by applying artificial heat only to the extent that it will produce and hold the temperature of car above the freezing point in the floor portion of the load.

The value of frost prevention service is lost if a proper and continuous record is not maintained from point of origin to destination, and if upon analysis of such record a defect in service is disclosed, immediate corrective measures should be taken with employee at fault at station where service failure occurred.

At the present time the protection of perishable freight against frost damage is not a standard uniform practice throughout the country, and shipments in transcontinental hauls receive the benefit of heater protection for only a portion of the journey. Carriers should standardize in the methods of performing frost protection service and the methods of recording and reporting same. If all carriers handling perishable freight in territories where cold weather prevails, will agree on ways and means whereby uniform methods of heater protection will be employed and discontinue the present illogical and expensive practice of only partial protection, they will help solve our problem.



Nickel Plate Light Mikado, Equipped with Automatic Cut-off Control, Hauling a Dynamometer Car and Test Train

Automatic Cut-Off Control Tested in Service

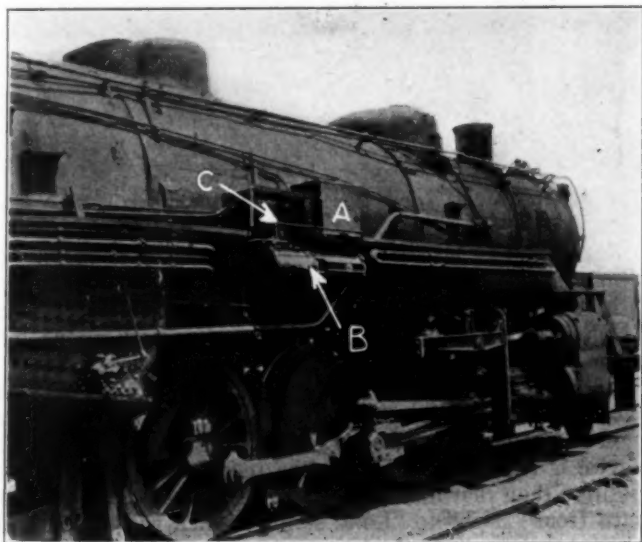
Description of Control Device—What Its Performance on Two Railroads Has Demonstrated

THE TOTAL ABSENCE of any means for automatically regulating the point of cut-off in steam locomotives, up to the present time, is contrary to the almost universal use of such regulating devices in the field of the stationary engine. From the days of the first steam locomotive, the operation of the reverse lever has been by the effort and

reverse gear valve. It is contained in a metal box 23 in. by 18 in., by 13 in., located as shown at A in the illustration of the locomotive.

The controller is connected to all four exhaust passages of the cylinders by a one-inch pipe. Exhaust pressure is conveyed by this pipe to the pressure regulator unit of the controller and also back to the cab where it terminates in the back pressure gage mounted on a small control panel shown in one of the illustrations. A second pipe connects the controller with the main air reservoir from which the controller obtains its source of power to adjust the reverse gear and hence the cut-off.

Tests made in road service apparently show that, for any given locomotive, dependent on type, size and boiler pressure, there is a definite constant back pressure which, if maintained constant at all speeds above which it is first reached, will permit maximum rated drawbar pull to be developed. This back pressure is held constant by lengthening the cut-off as the speed decreases and shortening the cut-off as the speed increases. Should the boiler pressure change in addi-

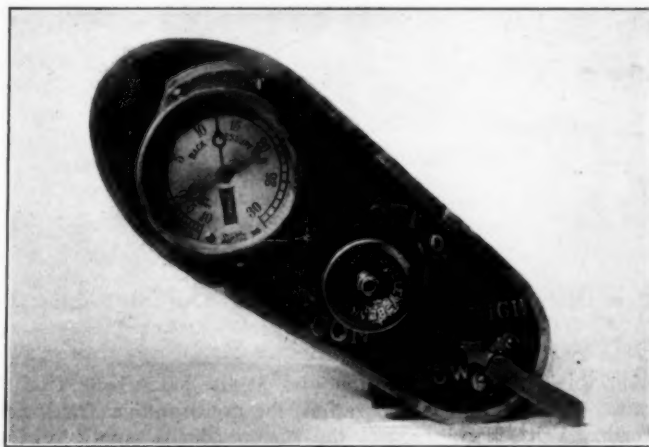


Location of the Controller Box (A) and Poppet Type Reverse Gear Valves (C) with Respect to the Reverse Gear (B)

at the direction of the engineman. The development and practical application of a mechanical device, therefore, to perform this operation instead of the engineman, marks the opening of an entirely new field in locomotive development. It is apparent from data already secured that automatic control of the point of cut-off provides the possibility of a marked improvement in locomotive operation.

Device for Automatically Adjusting Cut-off

The mechanical device, tests of which are described in this article, is known as the Automatic Cut-off Control, made by the Transportation Devices Corporation, Indianapolis, Ind. It is actuated by the pressure of the steam in the exhaust passages of the cylinders, and connected to a power reverse gear. The controller, or principal part of the device, is mounted above the power reverse gear and in front of the



The Engineman's Back Pressure Gage and Control Panel

tion to a change in speed, the cut-off adjustment will be made accordingly. The proper exhaust pressure to be maintained is shown by the idle hand on the back pressure gage mounted on the control panel in the cab; the actual pressure existing is shown by the movable gage hand.

Once the proper pressure for a particular locomotive is determined, the pressure regulator is so set and this setting

is known as "High." A second setting, which may be anything less than the "High" setting, is known as "Low," being determined by the minimum operating requirements. The engineman may change from one setting to the other by means of the handle at the right end of the panel, which is pointing either on "High" or "Low."

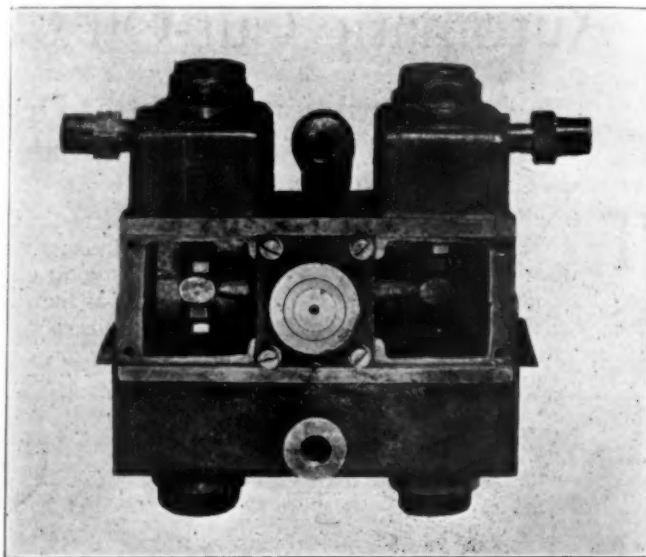
Whether the cut-off is to be adjusted by the engineman or by the device depends on the throttle opening. A pipe is run from the right steam pipe back to a primary control valve in the cab. This primary control valve is designed to be set so that with the throttle more than 60 per cent open the Automatic Cut-off Control makes adjustments of the cut-off.

The air supply from the main air reservoir passes through this valve and the action of steam pipe pressure is to supply or cut off the supply of air to the controller. A small slot in the dial of the back pressure gage displays the word "Hand" when the reverse lever is subject to the operation of the engineman and "Auto" when operated by the device.

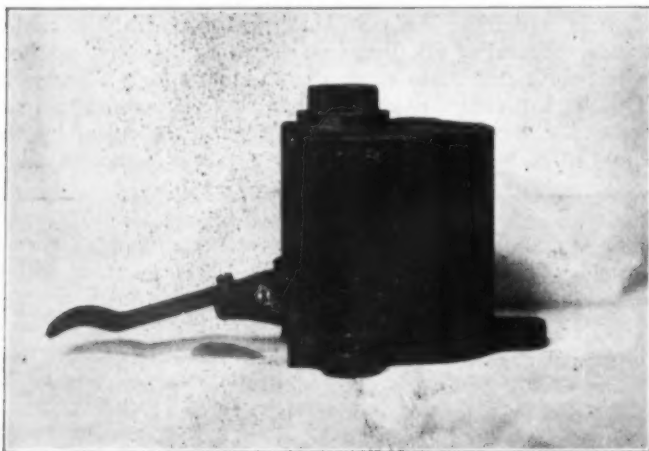
The engineman can cut the device in or out by the position of the throttle, or permanently cut the device in or out by turning the valve wheel located in the center of the panel. Again the device can be momentarily cut out, even though the throttle is fully open and the panel valve is also open. To do this the engineman holds his foot on the pedal of the foot valve.

In order to hold any predetermined exhaust pressure within the required limits, certain modifications in standard reverse gear design are necessary. The modifications consist of the poppet valve design of the reverse gear valve to eliminate the lap and lead of the slide and rotary valves. Lap and lead must be of independent adjustment and negligible so that fine adjustments and quick response of the reverse gear are positive. The valve of this gear is shown in one of the illustrations. Since the reverse lever must be always

shown by the gage. If the engine is to be operated at 9 lb. exhaust pressure, when the pressure builds up to 10 lb. the pressure regulator actuates the reduction valve and the controller causes the gear to be hooked up until the pressure is reduced to 9 lb. This will be kept up until the maximum speed is reached and the cut-off is at its shortest, when the controller is prevented from going into back motion. If at any time a grade or other condition should be encountered that would cause the pressure to drop to eight pounds, the cut-off will be lengthened and nine pounds back pressure restored. This may keep up until the reverse lever is again in the corner. The differential of one pound above and below the constant is as close as practical operation will permit, although the controller is said to be capable of one-quarter pound differentials. The exact value of the back pressure



The Reverse Gear Valve Assembly with Poppet Type Valves



Foot Valve for Temporarily Cutting Out the Automatic Cut-off Control

available for hand operation and at the same time free to move under automatic operation, the quadrant is circular in form. With hand control the piston of the small locking cylinder at the bottom of the quadrant is against the quadrant, holding it stationary. With the Automatic Cut-off Control in operation the quadrant is free to rotate and allow the lever to follow the gear. The locking cylinder is controlled by the primary control valve, actuated by the throttle opening.

In operation, the locomotive starts the train with the reverse lever in the front corner and the throttle open so that the device cuts in as shown by the word "Auto" on the gage. As the speed increases the back pressure builds up as

maintained has no bearing on the operation of the device which is designed to adjust itself to any pressure to which it is set, the characteristics of the locomotive establishing the "High" setting and minimum operating conditions, the "Low" setting.

Should the engineman at any time close the throttle, the reverse lever will remain where it was before the throttle was closed, and not go to the corner. The engineman, when the device is cut in, cannot move the reverse lever to any other position than that fixed by the controller. He may, however, turn from "High" to "Low" setting, which will immediately change the cut-off to the lower exhaust pressure. To control properly the pulsations of the exhausts at low speeds, a uni-flow fitting is inserted in the back pressure line between the cylinders and the controller.

The locomotive engineman has no guide other than a varying degree of experience to assist him in determining the proper cut-off to use. Again because of the many other duties, the attention to which is vital to safety, he is deprived of time, particularly continuity of time, to adjust cut-off. It is the function of the Automatic Cut-off Control to provide accurate and constant adjustments of cut-off and to do this without the attention of the engineman.

Nickel Plate Tests Automatic Cut-off Control

The effect on speed and drawbar pull of cut-off regulation as performed by the engineman and by the Automatic Cut-off Control under competitive test conditions is shown graphically in a chart typical of a series taken from dynamometer car tests of a Nickel Plate light Mikado locomotive, stoker fired, on a three-mile section of test track. Each run required about 15 min. The maximum grade was 42.24 ft. per mile, and

the maximum track curvature 2 deg. The same train was backed up to the starting point for each test, the engine and crew being the same in each case.

The results of these tests, as borne out by the charts, may be summarized as follows:

1—There was no appreciable difference in the minimum speeds of the respective trains over the grade where minimum speeds would naturally be expected.

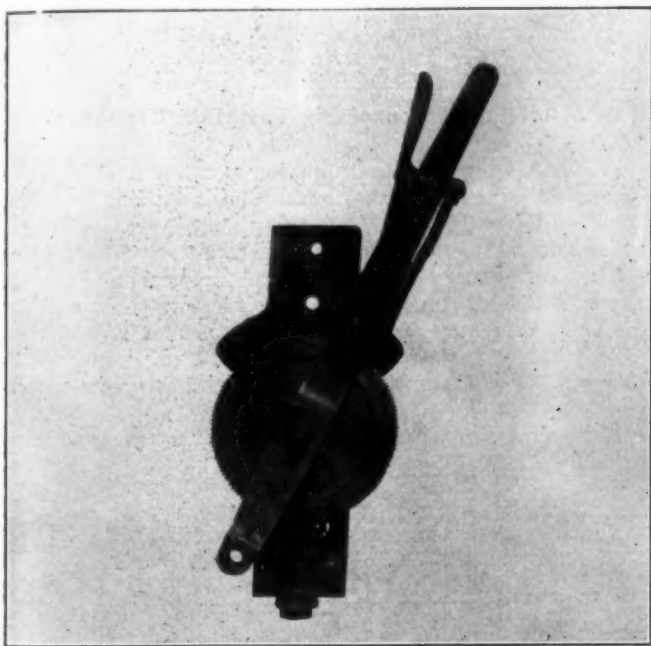
2—There was a decided difference in the cut-offs used by the enginemen and by the Cut-off Control. In starting the train, the reverse lever remained in the corner longer with the Cut-off Control than when operated by the enginemen, but this was an advantage in getting more quickly to the higher speeds and shorter cut-offs. In slowing down, the Cut-off Control did not hook down the reverse lever as quickly as the enginemen did. In running, shorter cut-offs were used and for greater periods of time when the Cut-off Control was in operation.

3—The Cut-off Control generally showed equal or better speeds, drawbar pull and drawbar horsepower than those ob-

might make the lengthening of the cut-off advisable had such a thing been the proper thing to do. The fact is that the enginemen really lengthened the cut-off at the wrong time because of their mental attitude as to the necessity for it.

Fuel Economy Tests on the Big Four

In order to determine the effect of the Automatic Cut-off Control on fuel consumption this equipment was applied to a C. C. C. & St. L. Mikado locomotive, No. 160, and a series of tests run between Springfield, Ohio, and Bellefontaine, Ohio. Tests made on the same class of locomotive over the same territory, in April, 1923, had indicated that 13 lb. back



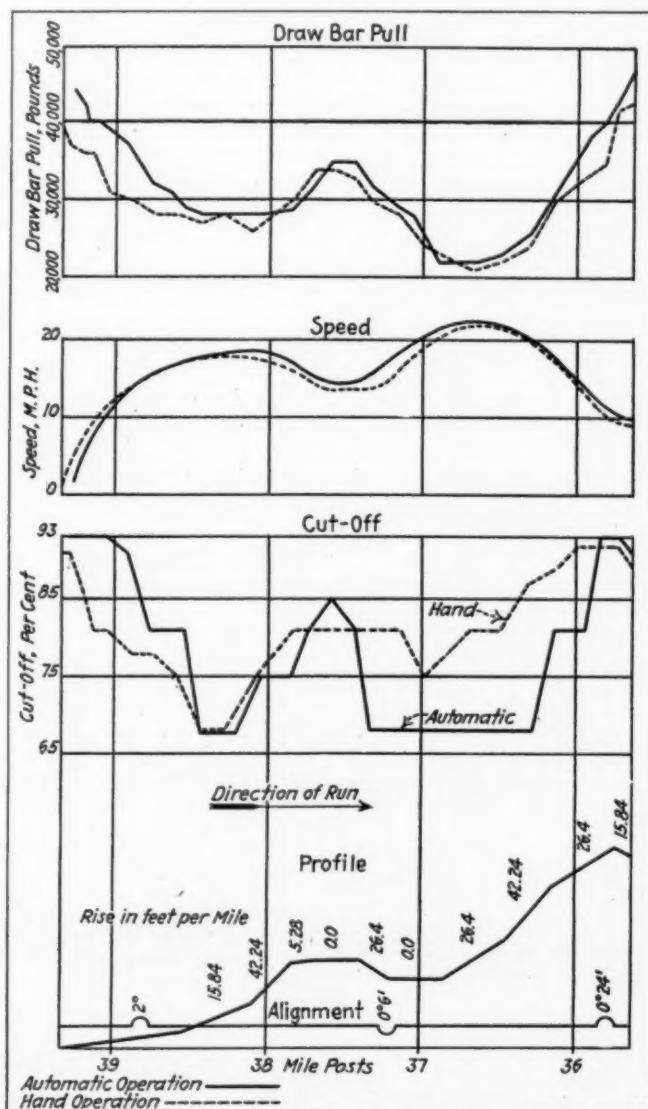
The Reverse Lever Assembly Includes a Circular Quadrant Which is Held Stationary with Respect to the Bracket, for Hand Operation, by the Locking Cylinder at the Bottom of the Bracket

tained by the enginemen, regardless of the longer cut-offs used by the latter.

4—The time performance between mile posts was generally in favor of the Cut-off Control.

5—The enginemen as a rule anticipated the grades by lengthening the cut-off in advance of the train actually being on the grade. The Cut-off Control did not lengthen the cut-off until the grade resistance had actually made itself felt upon the train, this being particularly noticeable between mile posts 38 and 37. It is evident that if shorter cut-offs can be used without lessening the drawbar pull or speed for short runs, the cumulative effect over the entire division will be conducive to lower fuel consumption and better time and tonnage performance.

Because of the shortness of the Nickel Plate tests it should be noted that the enginemen were in a position to devote all the time necessary to adjusting the reverse lever and to take advantage of their knowledge of the road-bed gained through years of experience. They could also look ahead and on approaching a grade take advantage of any peculiarity which



A Comparison of Draw Bar Pulls, Speeds and Cut-offs Developed in the Dynamometer Car Tests on the Nickel Plate

pressure was the proper setting for the automatic cut-off governor, and this setting was used during the fuel tests.

A total of four runs were made in the eastward direction between Springfield and Bellefontaine, two runs with the cut-off controlled by the engineer and two runs with the cut-off controlled automatically. The same train was used during each test, but due to heavy rains during the second, third and fourth tests the train, which consisted entirely of loaded coal cars, gained in weight. An allowance of four per cent of the total weight of lading was added to the original weight to offset this factor.

The coal burned during the tests was loaded from one car,

held for this purpose at Springfield, thereby keeping the grade of coal burned constant. Coal was weighed onto the tank previous to each run, and the coal left at the end of each run was weighed off. In addition, the weight of the coal fired before and after each test was taken. The coal figures for the test runs, therefore, include only coal actually burned from the start to the finish of the runs.

In order to make the four runs truly comparable, it was

different engineers, while runs 3 and 4 were made with the same engineer.

The stall which occurred between West Liberty and Gest Yard on run 4 was due to a shower which caused bad rail conditions, and inability to get sand to the rail resulted in the engine slipping. A train following pushed the test train about 30 car lengths after which Engine 160 handled the

TABLE I—GENERAL DATA AND RESULTS OF BIG FOUR FUEL TEST RUNS

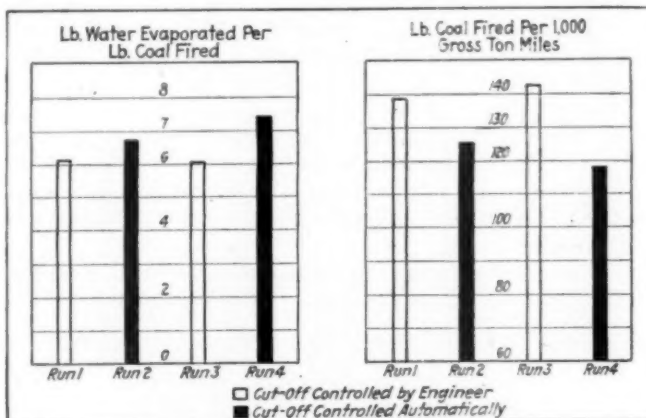
	Run 1 Hand	Run 2 Auto	Run 3 Hand	Run 4 Auto
Actual train tonnage.....	3,597	3,701†	3,714†	3,714†
Adjusted train tonnage.....	4,347	4,451	4,464	4,464
Running time, min., bridge 295 to Gest yard.....	158	176	171	169
Standing time, min.....	139	158	186	228
Total time on road.....	297	334	357	397
Average running speed, m.p.h.....	11.2	10.1	10.4	10.5
Average max. speed between stops, m.p.h.....	16.3	14.1	14.3	14.1
Min. speed over ruling grade, m.p.h.....	9.5	4.0	3.5	5.0
Average steam pressure, lb. per sq. in.....	191	195	192	194
Coal fired, lb.....	14,713	13,709	15,631	12,960
Water evaporated, lb. (10 per cent return by heater).....	91,135	92,730	95,480	96,525
Lb. water evaporated per lb. coal fired.....	6.19	6.76	6.10	7.45
Lb. coal fired per 1,000 gross ton miles.....	138.8	125.4	142.7	118.1
				128.9*

† Includes 103.8 tons, estimated increase in train weight due to rain during test runs 2, 3 and 4.

* Based on mileage to point of stall at mile 104.7.

necessary to keep the number and location of stops and starts constant. For this reason, every siding was entered, and the moves in and out of each siding were the same on each run. The speed records, two of which, together with the track profile, are included, show how closely the moves of the test runs compare.

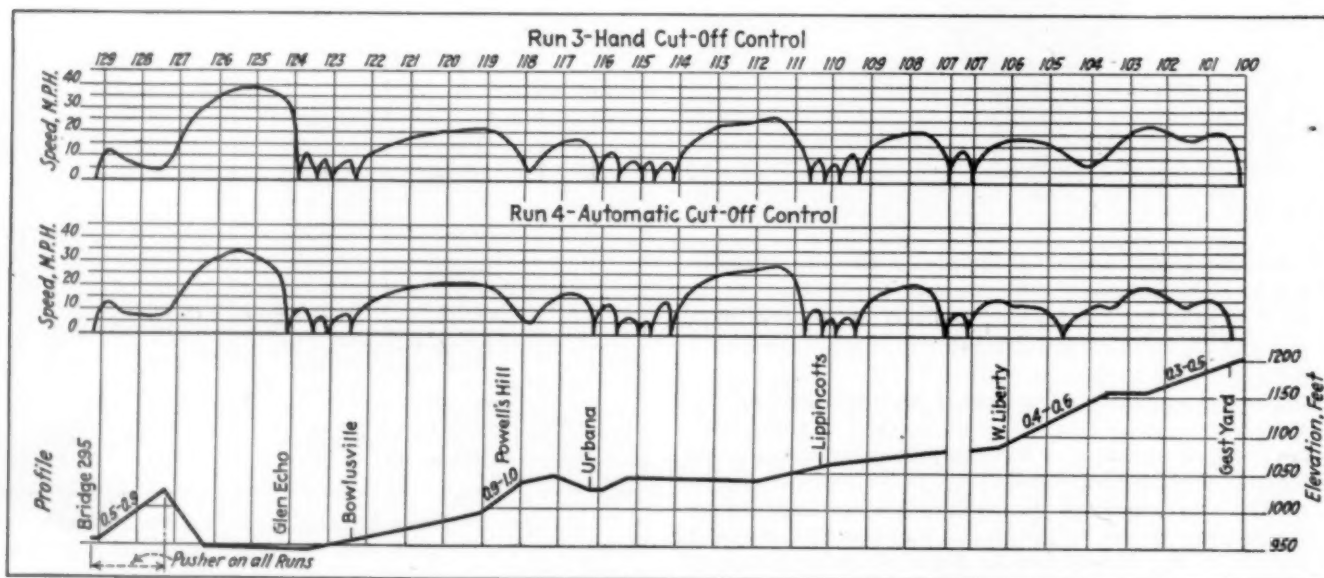
The tank of the locomotive was calibrated and water readings taken at each stop. The feed water heater was credited



Graphical Comparison of Big Four Fuel Test Results

train alone. The coal consumption per ton mile, for this reason, was calculated up to the stalling point and also including the stall.

The general averages developed by the test runs are given in Table I. From the standpoint of fuel economy, the two automatic cut-off runs show an increased water evaporation rate and a decrease in coal consumption per ton mile as compared with the two runs where the cut-off was controlled by the engineer. The results indicate that with this class of loco-



Speed Records and Track Profile of Two of the Big Four Fuel Test Runs

with a 10 per cent return to the tank during each run. The booster engine was cut in at all starts, but was not used on the ruling-grade, Powell's Hill, during runs 1, 2 and 4. On run 3, with hand operation of the cut-off, it was necessary to cut in the booster near the top of the hill.

The standing time in sidings was kept as constant as possible. The time standing was greater on runs 2 and 4, with the cut-off controlled automatically. This, without doubt, caused a slight increase in coal consumption but no effort was made to estimate the amount. Runs 1 and 2 were made with

motive a gain of approximately 10 per cent in water evaporated per pound of coal fired and an approximate decrease of 10 per cent in coal consumed, may be expected by automatically controlling the cut-off.

It should be noted that the actual running time on all tests, with the exception of the first where the lading was dry and the train lighter, is nearly the same. The more effective firing under the constant draft conditions held by the automatic cut-off combined with more uniform accelerations from stops, account for the increased rate of evapora-

tion and reduced coal consumption, indicated graphically in one of the charts.

Operating Results in Slow Freight Service

The effect of better average drawbar pull and speed on economic operation is shown by the following operating data taken from competitive cut-off control tests in slow freight service on the Cincinnati Northern, a subsidiary of the Big Four:

	All engines same class	Engine with automatic cut-off	Per cent, increased production
Average miles per hour, total time.....	10.1	11.3	....
Average gross ton miles per hour, 1,000	32.61	39.2	20.2
Average gross tons per train.....	3,239	3,477	....

This shows the accumulated effect on the rate of production, in terms of 1,000 gross ton miles per hour, of regulation of cut-off to develop maximum rated drawbar pull at each speed.

It is interesting to note that increased tonnages do not reduce the speed as much as might be expected when the cut-off is adjusted automatically. This is clearly brought out by the following comparison, over the same territory and service:

Actual train tonnage	Speed, running time, m.p.h.
3,300-3,400	15.2
3,400-3,500	14.6
3,500-3,600	14.8
3,600-3,700	14.4

Certain mechanical and operating advantages, claimed for the automatic control of cut-off and substantiated in varying degree by the tests, are as follows:

1—Standardization of exhaust nozzle sizes. This is

possible because the locomotives are uniformly operated as to cut-off.

2—Elimination of water stops. The proper use of cut-off saves water and eliminates certain stops that are now occasionally made, requiring the maintenance of water supply stations that may otherwise be eliminated.

3—Uniform conditions of firing. Constant back pressure provides constant draft and firemen do not have to carry excessive fires in anticipation of a heavy pull on the fire because of the sudden use of long cut-offs.

4—Shock on reciprocating parts is lessened. As the pistons are opposed by a constant exhaust pressure, they are not subject to shocks where this pressure varies widely.

5—Lubrication protection in drifting. The back pressure gage is calibrated to register a vacuum; if in drifting the throttle is shut off only to the extent that no vacuum is created in the exhaust passages, no smoke box gases will be drawn into the cylinders to destroy lubrication.

6—Elimination of valve setting errors as they effect cut-off. It is difficult and practically never possible to set the valves so that the same quadrant notch on all engines of the same class will give the same per cent of cut-off. As the Automatic Cut-off Control adjusts the cut-off independent of any mechanical condition as to reach rod length, the proper cut-off is used regardless of errors of this nature.

7—Safety of operation. Many times on critical pulls the engineman is required to watch for signals, the brakes, the sand, the injector and the throttle to keep from slipping. A moment lost in handling the throttle and sand may cause slipping and stalling of the train.

Characteristics of 100 Per Cent Locomotives

Western Railway Club Devotes Its April Meeting to a Discussion of This Subject

SOME OF THE characteristics and features of 100 per cent locomotives were considered at the regular monthly meeting of the Western Railway Club, held at the Auditorium Hotel, Chicago, April 21, 1924. The paper of the evening, entitled "Serviceability and Economics of 100 Per Cent Locomotives," was presented by C. A. Seley, consulting engineer of the Locomotive Firebox Company, Chicago. An abstract of the paper follows:

"What is a 100 per cent locomotive? Sometimes it is a leading class of freight locomotives on a railroad, the tractive power of which is taken at 100 per cent, and other locomotives are rated in the percentage their tractive force bears to the 100 per cent class. In an engineering way, it is understood to be a locomotive having a boiler equipped with heating surface sufficient to supply the amount of steam necessary for the cylinders of the locomotive, when operated at maximum capacity.

"Locomotives are variously operated as regards their maximum capacity. Ordinarily, they are not so worked continuously, unless on long levels or on long sustained gradient and there should be some margin over the cylinder requirements to supply auxiliaries that call for steam and which are not ordinarily taken into account in figuring boiler proportions. On modern locomotives, these auxiliaries may comprise air pumps, stoker engines, boosters, water pumps or injectors, blowers, train steam heat, electric lighting of headlights and sometimes train lighting, etc.

"A locomotive may go into service equipped with a 100 per cent boiler calculated on the above requirements, but how long does it remain 100 per cent? The designer's rules are based on the use of good fuel, say coal at 14,000 B. t. u. and an evaporation of 55 lb. of water per sq. ft. of firebox

heating surface per hour, and a much smaller rate from the tube and flue heating surfaces, the ratio being dependent on size, spacing and length.

"First, as regards the fuel; the bulk of coal supplied to locomotives will run from 12,500 to 11,000 B. t. u., a direct discount in heat value of from 10 to 20 per cent, which is reflected in boiler performance. The designer also assumes a coal burning rate of 120 lb. per sq. ft. of grate per hour as the maximum rate for economical combustion. Grate area, then, is an essential feature and if accompanied with use of inferior coal, often produces an excessive coal burning rate. In fact, a 100 per cent boiler does not mean much unless the coal burning rate is taken into consideration.

"A number of other things enter into the fuel question; draft, air admission, fire depth, arch location, and spark loss; all more or less adjustable features, contributing to or hindering proper combustion and affecting the 100 per cent performance.

"Not the least of the foregoing items is that of air admission below the grates. There is some use of a ratio of 14 per cent of the grate area, but this is open to question considering the great variations of grates and coal rates. It is believed to be safer practice to base the total air openings below the grates on the total net cross sectional area of the flues and tubes which convey the gases to the front end. In order that there may be no vacuum in the ash pan, the above ratio should be 100 per cent and should be checked during the actual performance with a draft gauge.

"The evaporation rates above cited are dependent on relatively clean surfaces for the heat transfer. Boilers must be kept clean and free from scale and accumulated deposit of sediment on interiors of heating surfaces; tubes and flues

must also be kept open for free movement of gases.

"Nothing pays better with respect to boiler operation than proper washing out and should be regulated with respect to size of boiler and amount of evaporation rather than a blanket rule governing all boilers, large and small, being washed at certain intervals. With proper boiler water circulation, the precipitated solids are carried to washout points rather than settling all over the heating surfaces, and the amount of evaporation and precipitation should rule rather than a uniform fixed time for all classes.

"Any or all of these considerations are met with daily in locomotive operation and local conditions determine to what extent the boiler performance must be discounted. In almost every other line of machinery, a margin of capacity is deemed desirable; so that with operating conditions unfavorable, the margin can be drawn upon to keep up the desirable 100 per cent results. A so-called 'Safety factor' of from five to 25 per cent is common practice in estimating, to keep on the safe side in many affairs of life.

"There are very many well designed locomotives that lack just a little in respect to boiler performance, due to prevalence of some unfavorable feature of operation, although they may be figured on the 100 per cent basis, and be able to deliver it were all conditions favorable. In such cases, the endeavor to deliver full capacity is accomplished by increased costs out of proportion to the normal. A locomotive is only as good as its boiler and when liberal proportions are provided, the response in the case of extra demands or to meet unfavorable conditions are at hand and respond at normal rates.

"Increase of locomotive boiler horsepower calls for an increase of evaporation requiring additional heating surface and stimulated water circulation. Assume a fairly modern locomotive already equipped with brick arch and superheater. Unless the tubes are excessively long, there is no advantage to be gained by their consideration, which leaves the firebox as the only location for improvement. A variety of expedients in the way of water tables or legs, water circulation means, etc., have been proposed."

Mr. Seley here elaborated at some length on the theory, construction, and application of Nicholson thermic syphons, as described at various times in the columns of the *Railway Age*. The functions of the syphons as affecting locomotive serviceability he summarized as follows:

"Brick arch support, very stable and dependable.

"Heating surface of greatest value.

"Thermic pump of high capacity for water circulation to stimulate evaporation surfaces and to equalize structure temperatures.

"Insurance against crown sheet collapse.

"A time saver in firing up.

"For a relatively small investment, the boiler capacity can be increased 10 to 15 per cent based on increase of equivalent evaporation, because of the heating surface and circulation advantage already covered. Whether or not the available increase may be usable as developed horsepower, it is there in fuel economy of like proportions, because of the increase of equivalent evaporation in the boiler operation."

Consideration was then given to the effect of syphon application to a locomotive boiler already 100 per cent of the maximum cylinder horsepower. The tendency of syphon-equipped engines to make better time because of added boiler capacity was pointed out. Mr. Seley also considered at some length the question of syphon maintenance which his experience in service had shown to be practically negligible.

Following the reading of Mr. Seley's paper a considerable number of the members participated in the discussion which lasted beyond the usual closing time. Practically all of the comments regarding the performance of syphons under actual service conditions were favorable. The discussion was led by H. T. Bentley, general superintendent of motive

power and machinery, Chicago & North Western, as follows:

Mr. Bentley: The Coatesville tests conducted by Dr. W. F. M. Goss showed the firebox heating surface to be from five to six times as valuable as flue heating surface and it is therefore important to utilize as much of the heat as possible in the firebox. As mentioned by Mr. Seley, attempts have been made at various times to install vertical water partitions, water tables connected to each side sheet and other devices but, until the advent of the syphon, all attempts along that line failed, due to lack of circulation. It remained for an ex-Chicago & North Western man to devise the most modern and up-to-date improvement in locomotive boiler construction that has been put on the market for a good many years. When J. L. Nicholson brought the first syphon to the Chicago & North Western I was fearful that in bad water territory it would be a failure. Such was not the case. The first syphon-equipped engine on the C. & N. W. was sent to a division in Dakota where the water is very bad. After working for 12 or 18 months the engine was taken to the Winona shops and a thorough investigation showed that there was nothing the matter with the firebox, the syphon or anything connected with the boiler. Another feature of the syphon is the improved circulation as evidenced by the fact that, when firing up, the sides of the firebox increase in temperature as rapidly as any other part. The C. & N. W. has 12 engines, received about six months ago, equipped with syphons. These are the largest passenger engines running out of Chicago with a tractive power of 45,000 lb. Due to use of the syphons these engines do not have to make the coal shed stops otherwise necessary with non-syphon engines.

L. R. Pyle, vice-president, Locomotive Firebox Company: I have observed many tests of syphon-equipped engines over a four-year period. One of the members said that when you have a 100 per cent boiler you have a boiler which is good enough. I have yet to ride on a locomotive having a 100 per cent boiler on the best road in the United States which you can't run out of steam just as quick as you open the throttle and use the lever and try to develop the cylinder capacity. If you try to develop 3,000 or more horsepower you will find a coal rate so high that you cannot handle the coal with hand firing and it will keep a stoker busy. I was on a test when we ran the coal rate up to 275 lb. of coal per sq. ft. of grate area per hour and we had not then reached the capacity of the syphon boiler. We couldn't commence to do that with a non-syphon boiler so the figure 100 per cent boiler is purely a figure to shoot at. As to maintenance, there are few who question the value of the syphon but many railroad men are afraid of maintenance. The question of maintenance costs is purely relative and should be balanced against savings. If a locomotive appliance will save \$300 in a given period and the maintenance cost is \$10 in the same period, how much consideration should be given to the \$10? Moreover, the syphon as stated by Mr. Seley is a reliable safety device not subject to causing engine failures on the road. Mechanical men have locomotive equipment which fails in service and has to be cut out, but we have never seen a train cut out in five years' service on 60 roads owing to failure of the syphons.

T. F. Powers, general boiler foreman, C. & N. W.: The first syphons were put on the Chicago & North Western a year ago last September. When brick arches were first applied the boiler makers kicked on account of the extra work and wished that they were never put on, but I don't suppose there is anything that has saved us more coal than brick arches. In our experience with syphons covering nearly two years we have had two of them crack at the bottom. We repaired one for \$11.75 which was the total maintenance cost on one engine for that period. The total cost of the other was about \$15. From the boiler makers' standpoint in maintaining power for the company I work for I am absolutely in favor of the syphon.

Senate Hearings on Repeal of Section 15A

Testimony of Opponents of Repeal Concluded — Few Witnesses in Favor of Repeal

THE FIRST PART of the hearing before the Senate Committee on Interstate Commerce on bills to repeal section 15a of the interstate commerce act was concluded on April 19, when the testimony of those opposed to a repeal was brought to a close and the committee began hearing those in favor of a repeal. Chairman Smith announced that it was hoped to conclude this part of the testimony by Wednesday, as comparatively few witnesses in favor of a repeal had appeared, but because the Senate began holding morning sessions on the bonus bill no sessions of the committee were held on Tuesday and Wednesday. The opponents of a repeal, who had for some reason been asked to testify before those advocating a repeal were heard, had occupied most of the time allowed by the committee since April 9, except that a morning session on April 17 had been allowed to S. H. Cowan, representing livestock interests in favor of a repeal. In addition to the railroads the bills were opposed by the Chamber of Commerce of the United States, the Railway Business Association, represented by Alba B. Johnson, president, and the National Association of Owners of Railroad Securities, represented by S. Davies Warfield, president, and Forney Johnston, of counsel. The latter two organizations were heard on April 17 and 19. On April 21 Fred S. Jackson, attorney for the Kansas Public Utilities Commission, and John E. Benton, general solicitor of the National Association of Railway and Utilities Commissions, testified, and they were to be followed by representatives of the National Industrial Traffic League, which has proposed a substitute for 15a. Benjamin C. Marsh, managing director of the Farmers' National Council, also expected to testify, and it was understood that this would conclude the testimony in favor of a repeal, to be followed by rebuttal testimony by the railroads and possibly by representatives of the short lines.

An abstract of Mr. Johnson's statement, which also included charts and figures showing how in many years to 1923 the railways through operating economies made substantial headway against rising expenses outside their control, is as follows:

Statement of Railway Business Association

During these hearings the question has been asked whether there is any hope of lower freight rates. To give an answer is the object of this testimony. The element for which I speak replies "Yes, there is hope." That hope lies in operating economies. These will come through scientific advance. The railway companies will contribute progress in management and method. Manufacturers and engineers will perform a great part in mechanical improvements.

Our members provide the railways with rolling stock, track, structures, terminal and shop materials and all the parts and materials which enter into these. The object of the association is to promote such government policies that the railways can at all times proceed vigorously with maintenance, repair, modernization and replacement and with additions and betterments of the latest type.

We have a different relation to section 15-a from that of any other element. The history of section 15-a would be a very good history of the Railway Business Association. It was the absence of such a principle in the federal policy which made our organization necessary. For 12 years we labored for its adoption unceasingly. To promote its preservation we chiefly now exist. We urge you not to repeal it or amend it at this time.

Pursuant to the act, the commission has indicated 5¾ per cent as the rate of return at present desirable in the public interest. It sanctioned a level of rates which with record tonnage produced net income substantially short of that ratio. Yet the commission instead of increasing rates further has steadily and on a large scale reduced rates. Evidently the commission expects a part of

the needed net income to result from economies. It is our view that the facts justify hope to all concerned from economies.

Progress in Railway Equipment

The heavier locomotives and cars and the longer trains brought about a new standard of rails, road-bed, bridges and other structures. If it were possible to show on a chart the rise in cost of replacing the railroad as a whole we would still not be telling the whole story, because the increase would represent not only a higher level of wages and prices but a change in the character of the plant. Rails and ballast are heavier, frogs and switches more powerful, bridges stronger. Capacity of track was increased by installation of signal systems.

Repairs have been expedited and cheapened by new shop machinery.

Competition in Excellence

Over the whole field, progress in design has been accompanied by progress in parts, appliances and materials. A locomotive has more than 600 parts, a freight car perhaps the same. The committee is asked to accept with our compliments two dictionaries of the Simmons-Boardman Publishing Company, publishers of the *Railway Age*, composed of pictures and descriptions of standards, the one locomotive, the other cars. Specialties are also used on the track, in the shops and in terminals. On each of these parts, groups of concerns are competing in constant rivalry to produce improvements for economy. A volume could be written on quality of timber, metals, paint, cement and other materials and the testing methods by which makers seek to make good their claims of superiority.

The compensation which the users of the railways pay to the owners and creditors for the use of their capital is represented by the interest and dividends paid. The work done by the railways in return for this use of capital is represented in the tons carried one-mile. The ton-miles per dollar of interest and dividends in 1903 were 360; in 1913, 417; in 1923, 450. This is in face of the fact that the owner of the securities could buy less and less for his dollar and the railroad dollar of expense would pay for less and less in labor, equipment and material. The explanation is efficiency—not how much the railroads spent but the kinds of things they bought and the way they used them.

Investment of New Capital

The 90 lb. rail which replaces a 60 lb. rail is charged 30 lb. to capital account and 60 lb. to operating expenses. If a locomotive comes out of the shop modernized, the margin of new value is capital investment. So with cars. If new locomotives are ordered, the price paid includes the cost of the mechanical progress represented in them as compared with previous standards on the same road. Instead of replacing worn out locomotives with new ones of the same design or making net locomotive additions of the same style as were ordered last time, the railroad orders a type which costs more in original outlay but is expected to earn the difference by the economy with which it does the work. The same principle runs through all the schedules of maintenance of road and equipment and additions and betterments.

Relation to the Business Cycle

This process is marked by cycles. After a depression such as we had in 1921, during which the roads husband their resources, general business recovers and the railways resume additions and betterments to meet the new demands upon them. The strongest roads, which have the best credit, are the first to place orders. If the period of prosperity continues, other roads are able to finance such improvements. If credit were to strengthen indefinitely the cycle would persist until a larger and larger part of the mileage all over the country would be reached.

Securities

Simultaneously with the cycle from strong roads to those not so strong is a second cycle—the cycle of securities. When the depression first lifts, it is possible for the strongest roads to market the most gilt-edged form of railways securities—the so-called equipment trusts. As the recovery proceeds, strong roads which have unencumbered property begin to sell first mortgage bonds. Then comes a market for junior liens. If the recovery is uninterrupted some roads may offer preferred stock. Competent observers regard it as vital that common stock should be

salable. The reason is that in some states savings banks are forbidden to invest in the bonds of companies whose stock falls below a given ratio of the total capitalization or whose stock has paid less than a specified dividend for a specified number of years. If savings banks, insurance companies, trustees of estates and conservative individual investors cannot take railway bonds because of the status of railway stock the railways will no longer be able to sell bonds or stock either. It is therefore essential in the public interest that conditions be created under which the cycle of securities may continue until stocks as well as bonds are sold by one road after another. Those conditions can only come through uninterrupted protraction of confidence in railways.

Additions and Betterments

Hand in hand with the cycle from strong roads to roads not so strong and the cycle from equipment notes to common stock, there is a third cycle. This is the cycle of additions and betterments. Recovery is always sudden. We seem unable to master the lesson of history and learn to expect what experience shows we always have—traffic mounting to new records even while there is still widespread suffering from the depression. The railroad is confronted with a demand for immediate enlargements. To pass upon and adopt new designs will take time. There is competition among the roads for deliveries. So at first they order on the old designs. Not only so, but they order rolling stock first, although they may know that construction of parallel tracks, the installation of signals and the enlargement of terminals would enable them to haul the load with a smaller number of cars. They can't wait. More than that, it might take more capital than they can obtain. They may not be able to afford at the moment the investment which in the long run would be most economical. As credit growth persists one road after another on the way through the first two cycles progresses from hasty additions and betterments made to meet instant requirements, down through the list of improvements promising economy. They adopt new designs. They undertake extensive works. They reach such items as modernization of the shops with up-to-date machine tools. All along the line are opportunities to save expense if investors' confidence lasts long enough to complete the cycle.

Interrupted Cycles

None of these cycles is ever completed. The roads never do all that it would be profitable to do in the direction of progress. The consequent loss to the users of transportation is one of the evils of periodical ups and downs in railway operations. If the public is to have the full benefit of all possible operating economies and is to realize that full benefit in the shortest time, the problem is to avoid whatever may tend to interrupt the input of capital investment in improvements.

Railway Credit Under Section 15-a the Basis of Railway Achievement in 1923

You will remember that the relief in net income intended to result from the rate advance of 1920 was postponed by a slump in general business and hence in volume of traffic. Resumption of large-scale purchases by the roads was on January 1, 1922. A glance at gross and net earnings then current will show that these in themselves contained nothing to warrant large investment of capital. For the year 1921 the return on the value of the property was 3.3 per cent. In the middle months of the year it had been higher than at the beginning, when there were two months in red ink, but there was a steady decline after October, 1920, through January, 1921. What induced the roads to enter upon a moderate program of enlargements and investors to co-operate was the belief, first, that business would improve and that indeed the railway purchases would improve it; second, that the government policy in rate regulation would continue in the spirit of section 15-a. Business did improve. Net income did increase with larger tonnage under the rates allowed, and though in 1922 as a whole the roads fell short of earning 5¼ per cent, the prospects under section 15-a were sufficiently encouraging so that in 1923 it was financially feasible to undertake that great project involving \$1,100,000,000 of new capital, which carried the new record tonnage last autumn.

Investment in Railway Improvements for Economies Brings Prosperity

Unlike most investments, which involve self-sacrifice with an eye to future benefit, the payment by shippers of rates that will result in improvements for economy brings the shippers a direct and immediate benefit. Railway purchases are so vast; a moderate percentage upward or downward in them reaches such totals; what they buy ramifies so universally that stabilization of railway buying tends to stabilize everybody's business.

Take agriculture. The farmers very wisely take an active in-

terest in the buying power of consumers of their product abroad. They are apt to take much less interest in the buying power of their domestic consumers, though consumption at home greatly exceeds exports. To find a year in which wheat export approached one-third of the crop we have to go back to 1899, when it was 31.4 per cent. In 1913, the last pre-war year, it was 19.5 per cent. The largest year of corn export, 1899, we shipped out only 10.3 per cent. In 1913 it was 1.63 per cent.

The moment there is a slump in railway purchases every mill making goods for railways lays off part of its force and stops buying from those who furnish it with machinery, supplies and material, and these in turn go on part time or shut down. The effect communicates itself to every community in the country where articles are made for individual consumption—food, clothing, shelter, furniture, miscellaneous. In a short time millions of people are out of work and economizing in their purchases at the drygoods, grocery and butcher shops. The farmer has been hit in the biggest and best part of his market. The same would happen if any one of the largest groups stopped buying. In the case of the railroads and cognate industries there are special reasons for deploring these depressions. In the first place, there has been no year for several decades in which transportation facilities were inflated. They are not due on sound economic grounds for a deflation. There is no present prospect of having too much or too good transportation. In the second place, all that is suggested as a preventive of such depressions is that the government should refrain from regulating the railways too severely. If regulation is unsound and this brings on unemployment of industrial labor and loss of farm markets, then it is not economic causes but the act of government which has afflicted the nation.

Before the war, the railways went through a period of rising wages, taxes and prices on one hand, and on the other of freight rates but slightly advanced under a law containing no element of encouragement and a public opinion not then yet converted to the paramount importance of getting service and paying for it. Yet by progress in management and by mechanical development they so far overcame these handicaps as to postpone for years the substantial advances which as early as 1908 some observers predicted as necessary and which were made, though still inadequately, when the government itself took the roads. In the war both here and in France our transportation machine and its personnel were found to be in such a high state of efficiency that not even the blighting hand of government control could paralyze it.

Hope

You ask whether there is hope. Look for it in the story of the last three years—one of the most astonishing achievements in human annals. Rising from the chaos of war, these lines in 1923 came back in such a colossal effort that without delay, inconvenience or loss to shippers they carried a tonnage vastly in excess of any previous record. Look for hope in the better relations between the railway companies and their employees. Look for it in the better understanding of the railway problem by all elements of our citizens. I have referred to the long period in which service was taken for granted and shippers focussed their thought upon rates. The vital warrant for hope is in the change of emphasis.

I offer for the record telegrams received from business bodies declaring their opposition to the repeal of section 15-a.

We do not assert that section 15-a is perfect. Though the Railway Business Association has not declared any position on amendments which might wisely be made when any amendments are timely, I have in mind recommending, when the time comes, to my colleagues, and I know some of them agree with me, at least this one modification—that for recapture purposes excess income should be computed for a period of several years instead of for one year as the act reads.

You ask how long it would take for operating economies to afford relief in freight rates. The railroads waited many years for relief from rates too low and the arrearages accumulating in consequence cannot be made up overnight. The country was guilty of neglect. We were all guilty. We are paying the piper. Another answer is that you cannot drop a coin in a slot and carry away a locomotive or a car or a mile of track or a new terminal. These things take time. It takes time also for the courage and confidence of investors and of managers to revive.

In 1920 Congress sowed in the soil a seed of promise. The farmer knows that when he sows a seed he cannot hasten the harvest. The railways and those who equip them are quite as eager to speed up the process as any one else can be. We are in the business. We have the contacts. We know the necessary conditions. We believe our judgment should be persuasive with you. That judgment is this—that nobody in the United States at this moment has it in his power to do so much for progress in the railway economies essential to ultimate rate reduction as senators and representatives who have introduced bills for the repeal of section 15-a. Withdraw those bills and you will have

done a practical thing to protract and complete the cycles of development down through all the roads, down through all grades of securities, down through all kinds of improvements.

Mr. Johnson Cross-Examined

Mr. Johnson was cross-examined at some length by Senator Pittman and Senator Gooding, who appeared to derive some satisfaction from Mr. Johnson's admission that the association includes in its membership some jobbers and that he was not advocating "economies" for the railroads by cutting out jobbers' profits or from standardization of equipment. Mr. Pittman spoke of the "double profit" involved in the jobbing of locomotives, although Mr. Johnson said that locomotives, at least, are not sold that way. Mr. Johnson said that complete standardization of equipment would have a disastrous effect on the progress of transportation and would make it almost impossible to introduce improvements. When Senator Pittman asked what incentive there is under section 15-a for a railroad to try to reduce costs, Frank W. Noxon, secretary of the association, to whom some of the questions had been addressed, replied that one incentive is to "try to get the 5¾ per cent." Senator Pittman read into the record a number of letters written by Mr. Johnson to members of the association urging them to do everything possible to bring out arguments against the passage of the Capper bill to repeal section 15-a to the attention of individual members of Congress. "I guess we did everything we could in that direction," said Mr. Johnson.

Security Owners' Association

S. Davies Warfield, president of the National Association of Owners of Railroad Securities, presented three memorials voicing a vigorous protest against the repeal of section 15-a. One memorial on behalf of the mutual savings banks with 10 million depositors was signed by banks whose deposits aggregate 5½ billions of the 6½ billions total deposits in all the mutual savings banks. Another memorial was signed by life insurance companies with over 41 million life insurance policies outstanding totaling 23 billions of insurance.

Mr. Warfield said that 55 million people own railroad securities through their savings deposited in mutual savings banks, one billion of which is invested in railroad securities; that the number also includes holders of life insurance policies, two billion being invested in railroad securities by the life insurance companies for their protection. These classes of investors alone who would be injured by legislation adversely affecting railroad credit, he said, "therefore exceed by many millions any other class of our population."

The third memorial representing national and state banks and trust companies, with signers thus far aggregating resources of over five billions, Mr. Warfield stated, had not been in circulation sufficiently long for this class of investors to fully express themselves.

"Any impairment of section 15-a," said Mr. Warfield, "which embodies legislative requirements essential to constructive and successful regulation by government agency and establishes principles of regulation around which the entire Transportation Act was written, means injury to the railroads and to the service of transportation and therefore to all the people."

He pointed out that the people making the appeal were especially concerned in the hostile attitude toward the fundamental section of the act, for when remedial legislation was under consideration by Congress in 1919, the association of security owners had appeared before the Senate committee and suggested definite methods of rate regulation such as would tend to enable the Interstate Commerce Commission to stabilize railroad credit. This, he said, could only be accomplished by the adoption of methods of regulation to relieve and correct inherent difficulties then standing in the way of the adjustment of railroad rates and such as

would meet and make allowance for the varying traffic conditions in the territories traversed by the different railroads.

Section 15-a Only Solution Found

Mr. Warfield continued: "Section 15-a of the commerce act was devised by Congress after months of hearings and investigation and after years of recognition of the difficulties of the problem, viz.: to provide for the difference in traffic density between railroad territories that had hitherto been regarded as an insoluble problem. It was recognized as an indisputable fact that all rate territories in which the respective railroads operate do not produce the same traffic revenue and therefore Congress found it necessary to find a means for the adjustment of this disparity in traffic territories by a mandate to the Interstate Commerce Commission such as is contained in this section of the act. The body of competitive railroad rates can not be varied according to each individual carrier's requirements, as Congress is undoubtedly aware. The only practical solution that has been found is to adjust rates to the actual requirements of the majority of the railroads of the country in order that they may earn sufficient net operating revenue to enable transportation to be properly conducted and where individual railroads have received on their individual property value as fixed by the commission a sum in excess of 6 per cent, to provide that one-half be retained by such railroad, and one-half paid into a fund to be used under the commission's authority in the interest of transportation as a whole.

Supreme Court Declared Section 15-a Essential

"These memorials now before this committee show that the Transportation Act of 1920 was framed to meet these indispensable requirements in order that the railroads of the country may properly function as a national transportation system. This treatment of rate adjustment was finally affirmed in the unanimous action of the United States Supreme Court in its decision in respect to the constitutionality of the principles embodied in section 15-a when that court went so far as to declare that this method of procedure was essential to the adjustment of an interstate rate structure to sustain the railroads as a national transportation system.

Use of Excess Fund

"The association of security owners," said Mr. Warfield, "has always believed that the principles underlying section 15-a should be extended to the joint use of facilities owned by the respective railroads to greater extent than has been or is now being done."

Pointing out that while a substantial part of the proposals advanced in 1919 by the association of security owners were embodied in section 15-a, others had not been and since then had been pressed before the committee. Mr. Warfield said one of these was that the "excess or railway contingent fund should be largely expended in the acquisition of freight cars suitable for use in interchange traffic especially. We recommended that these cars be used in connection with certain classes of interchange freight cars now owned by the respective carriers under such common use methods of distribution through pooling as would reduce unnecessary empty mileage and otherwise procure large savings and as a guaranty against car shortage under any conditions.

"We believed through their adoption gradual recession in freight rates would have been attained and the objections that are now being urged against section 15-a avoided through the economies obtainable by the extension of the principle of co-ordinated relations that underlies this section of the act and around which the act of 1920 was framed."

He then said that arrangements had been completed for the discussion of these "very vital subjects between a special committee to be appointed by the American Railway Association—the car service agency of the railroads—and a com-

mittee to be appointed by the association of security owners," and added: "We look forward to constructive suggestions far reaching in result as the outcome of this joint action."

He urged the Senate committee not to disturb section 15-a with the damage incident thereto before the results could be attained that would meet the objections raised to this section by those who believed its repeal would bring lower freight rates.

"15-a," continued Mr. Warfield, "contains machinery for rate adjustment and is not responsible for rates higher than the necessities of transportation require. Its repeal now and before the realization of the full purposes of the section would be stopping short of one of its objectives which looks to the use of the contingent or excess fund for the purposes stated, in connection with other provisions of the Transportation Act which contemplate greater joint facility uses, greater efficiency, all working toward lower freight rates."

Section Does Not Do for Railroads

What Critics Say It Does

Senator Howell asked the same questions he had of previous witnesses as to whether the act does not contain an "assurance," and said that the power given to the Interstate Commerce Commission to prescribe minimum rates is intended to keep up the return. Senator Cummins answered this by saying that there are practically no minimum rates and that the power to fix minimum rates is not in section 15-a but in another part of the law and that it was designed to protect water lines against railroad competition. He showed that the order in which the commission advanced the rates fixes the new rates as maxima, not minima.

Forney Johnston, of counsel for the association, explained the practical operation of section 15-a to show, he said, that its repeal would be adverse to the public interest, although it does not do for the railroads what its critics say it does. He showed that the law no longer contains a percentage of return, that that is to be fixed by the commission; that the law was not the cause of the advance being made on a horizontal percentage basis, which was forced, he said, by the previous policy of the director general of railroads; and that the law has not repealed the former requirement that all rates must be reasonable to the shippers. This, he said, has been recognized by the commission in several decisions.

S. H. Cowan Favors Repeal

S. H. Cowan testified on April 17 in favor of a repeal of section 15-a on the ground that it "absolutely ties the hands of the Interstate Commerce Commission and the state commissions in the regulation of rates and changes the principle of rate-making by requiring a certain standard of earnings in each district." The commission's administration of the law, he said, taxed the people of the corn belt about twice as much as they ought to pay by including within the rate group lines that made it necessary to raise the rates of the group. He objected to "adding the value of a railroad in Wisconsin to that of a road in Texas" to get a basis of rates, saying that the Brownsville road made over 6 per cent while only one road in Wisconsin did so. He said the commission had no way of knowing either the aggregate or the net income for the Western and Mountain-Pacific groups and that after fixing a tentative valuation for the western roads as a whole it took Illinois out of the Western group, including two billions of property, without making any change in the western rates. "Under this law," Mr. Cowan said, "the railroads get less than they expect and the people pay more." He insisted that the best way to make rates is to take the judgment of some one as to what rates the people of a given section can afford to pay and let the railroads profit by the increase in the volume of traffic. Senator Cummins said that the question of a method of rate-making depends on whether the

situation is considered from the standpoint of a national transportation system or from a local standpoint. Mr. Cowan replied that there is no national system but that the railroads are owned by separate corporations.

Fred S. Jackson, attorney for the Public Utilities Commission of Kansas, objected to section 15-a on the ground that it changes fundamentally the processes of rate-making, subordinating the element of service to the requirement of a net return, regardless of whether the investment was or was not wisely made. The law has not helped the weak roads, he said, and they can neither reduce a rate to attract traffic nor raise one to increase revenues. He referred to the law as considering only the return to the carrier without considering the value of the service to the shipper and declared that the people of Kansas are paying higher rates than necessary in order to make up for the losses of carriers elsewhere. "We thought we had showed that the rates in Kansas were sufficient to provide a fair return on the property in the state," he said. "The carriers in Kansas are making more than the statutory return on their operations therein but the commission said that under the law the rates must be made not by states but by groups." When he said the railroads were adopting a "liberal" standard of maintenance Mr. Thom asked whether the railroads were maintaining their properties at too high a standard. "I suppose no standard is too high in one sense," he said, "but abnormal maintenance at this time is unfair to the shipping public." He believed that there has been better service and greater efficiency during the past year.

Association of State Commissioners

John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners, who appeared in support of a repeal of section 15-a on April 21, presented resolutions adopted by the association opposing the section. He also said in part:

That section contains no guaranty that the government will make good any deficit which may result from the operation of any carrier. It does command the commission to find the aggregate value of all the roads in the country, or in each rate group, and further commands that the commission shall fix rates which shall produce, taking all the roads together, as nearly as may be, an aggregate return upon the aggregate value of all equivalent to the fair percentage fixed. It accordingly does guarantee the right of the carriers collectively to earn in the aggregate a fair return upon the aggregate value of all, good, bad and indifferent, and irrespective of the extent to which they, respectively, serve the public in the actual movement of traffic.

I am unable to understand how any lawyer can say this does not change the law from what it was. In fact, it works a profound change in the law. It creates a new standard of reasonableness. It changes the attitude of the commission. It places the carriers in a vastly more favorable position in rate proceedings.

Before the Transportation Act was passed, the constitution did, subject to certain qualifications, which I need not now refer to, guarantee the right of each carrier to earn on the value of its own property a fair return. If that was all this act did there would be no criticism of it from the state commissions. And I may add that there would be no objection by the carriers to its repeal. However, it is not because the section operates to give assurance of a fair return that it is criticised on the one hand, and so vigorously defended on the other. It is because in its actual working out it operates to give assurance to many carriers of revenues "substantially and unreasonably in excess of a fair return," to quote from section 15-a itself.

Those who defend the section are continually saying that all it does is to give carriers the right to earn the percentage which the commission finds to be fair, and that no carrier gets anything except what it earns. Judge Thom said the other day that the law really is a limitation upon the rights of the carriers because, while doing no more than to "assure a policy" of permitting carriers to earn a fair return, it provides that if a carrier earns more than 6 per cent it shall surrender one-half to the government.

The friends of the law do not point out that, leaving as it must untouched the constitutional right of each carrier to earn individually a fair return, it creates a new right on the part of the carriers to earn collectively upon a collective value the percentage which the commission fixes under the section, and that the certain and give to many of the carriers a return greater than such car-

result of the operation of the law is to take from the rate payers riers could claim the right to earn before the Transportation Act was passed. Senator Cummins, before the committee the other day, is the first defender of section 15-a whom I ever heard make a full fair statement of the effect of it.

It is true that before the Transportation Act was passed the Interstate Commerce Commission dealt with carriers in general rate cases in groups, and that it did not attempt to limit the most favorably located carriers to a fair return on their values. But it is also true that the commission felt itself under no compulsion to attempt to produce a return on the roads which represented unwise investment and disappointed hopes. It was its practice to examine the results of operation on some of the major properties in any group involved, and if it appeared that a given schedule of rates produced a fair return upon such properties such rates were considered reasonable for general application. The reasonableness of the rates was the test and not whether all railroad property ever constructed, regardless of its usefulness in the transportation system, was earned upon.

Adverse Effect on Need for Economies

There is another objection to section 15-a which in the judgment of many state commissioners is a serious one. It can not but tend to abate the effort of carriers to operate their business as economically as possible. With this section in the law carriers that have properties of at least the average earning capacity are likely to feel that they need not worry about economies, because, if returns are not earned, they have the right under 15-a to rate increases which will enable them to make the desired return.

Furthermore, the operation of the recapture clause is likely to lead carriers to be very free in expending money when they have reached the point where recapture begins. Judge Thom remarked the other day that they would not be likely to spend one dollar unnecessarily when by not spending it they could retain fifty cents. But it is common knowledge that corporations, when they have made profits which result in very high income taxes, do often make expenditures for the purpose of putting their property into the pink of condition and otherwise, which they would not make if they were not faced with the alternative of dividing it with the government.

I am aware that section 15-a provides that the commission is to adjust rates which will produce the fixed percentage return "under honest, efficient and economical management and with reasonable expenditures for maintenance." Those words sound well, but they are wholly ineffective, so far as protection to the public is concerned.

Section 15-a is of importance only in general rate cases where all of the carriers of the country, or all the carriers of a rate group, are involved. In such cases the commission can not stop to investigate the economy of operation of carriers generally, and to determine what ones have failed to attain a reasonable standard, and the amounts by which the aggregate revenues of carriers have been thereby diminished. It is a matter concerning which shippers and the general public can not produce evidence. So the presumption is indulged that the expenditures reported by carriers to the commission are reasonable.

The Study of "Economy and Efficiency"

I do not doubt that the commission entertains a sense of responsibility, imposed by the presence of the "economy and efficiency" words in the statute, and that it has given serious thought to the subject. I have heard that Professor Cunningham, of Harvard University, has done some work on this subject for the commission. Hearings were held a year or two ago to investigate complaints made by brotherhood representatives that some carriers had wasted money in farming out locomotive repairs. I think one or more investigations before commissioners relating to individual roads are now in progress. But as to an organization, or working unit, within the commission, engaged upon the work of determining the economy and efficiency with which all of the carriers, or all of the principal carriers, are operating, there is none such discoverable. I went to the commission's office last Tuesday and made special effort to find out. I was advised at the secretary's office that there was none, but I was given a copy of a questionnaire calling for certain reports from carriers, which is, I think, referred to in the commission's report to Congress. I went to the Bureau of Carriers' Accounts, and asked to be directed to the bureau or section or committee having in charge the investigation of the subject, and I was told there was none.

Mr. Bledsoe went to the commission to find a working unit, if he could, engaged in making studies of efficiency and economy. All he found was that in the division of the work of the commission this part of section 15-a is inflicted on Division 5, composed, I think, of Commissioners Potter, Esch, Cox and McManamy. But commissioners engaged constantly in hearings and preparing reports and in all the multitudinous duties of the commission, cannot make the studies and investigation necessary to a

determination of the efficiency and economy with which all railroads in the United States are operated.

The commission has made certain investigations concerning the costs incident to farming out locomotive repair work, as Commissioner Potter said. It has a Bureau of Statistics which makes certain analyses of the periodical reports of carriers, just as he says. The Bureau of Statistics did that before section 15-a was passed. I assume no superfluous experts or clerks were then employed. I doubt if it has been expanded since section 15-a was passed. I have no knowledge. I do not question that the Bureau of Statistics has made such studies and comparisons as it has been requested to do by Division 5. The facts about it can be easily developed.

I assume you will ask some commissioner to come here. He can tell you what information is now required to be reported by carriers which was not reported before section 15-a was passed,—what studies the Bureau of Statistics has made since that date that it did not make before, and what information it has developed and reported to the commission that will enable the commission, in a rate case, to say how much carriers' aggregate net revenues are short of what they should be by reason of lack of economy and efficiency.

With 2,000 railroads in the United States, it would be quite remarkable if at least some of them were not running below a proper standard of economy and efficiency. This law was passed four years ago. If the commission has the machinery which is giving it the facts, it knows what ones fall below the standard, and how much their revenues have been reduced thereby; and it can advise you that it has that information, even though you do not embarrass the wasteful and inefficient by asking that the information be put into the record.

I do not think the commission has that information. It has developed that in certain farming out contracts more money was spent than would have been spent if the work had not been farmed out. That is a fragment of information only. What I am talking about is complete, or fairly complete, information. I do not think the commission has it. I do not think it is to be criticised because it has not. I think the acquisition of it is a task wholly beyond the capacity of the commission—certainly as now organized, and with its present funds. I doubt whether Congress will deem it wise to spend what would be necessary to spend in making the attempt.

Personally, I do not think the government can successfully and satisfactorily manage the railroads of this country, either through direct ownership and operation, or by leaving the railroads in the hands of their owners and telling the managers in detail just what they shall do, just what tracks shall be built, what improvements shall be made, what cars and engines shall be bought, and where and for how much, and how many men shall be employed and what wages and salaries shall be paid, and all that goes with management. And if the government cannot do that successfully in advance, I do not see how it can successfully do it afterwards, by attempting to determine what was reasonable and proper management, at a time past, and how much by way of revenue was lost to each railroad through failure to have a proper management and the aggregate effect of all such failures upon carriers' aggregate net return.

Railroad Legislation in Congress

WASHINGTON, D. C.

EFFORTS are apparently being made by the railroad labor organizations to take advantage of the legislative jam now existing in Congress to rush through the Howell-Barkley labor bill without adequate consideration. The necessary 150 members of the House have signed the motion filed by Representative Barkley of Kentucky to discharge the committee on interstate and foreign commerce from consideration of the bill, under the new rule adopted by the House at this session, because the committee had not held a hearing or acted on the bill within 30 days after it was introduced. The motion was then referred to the calendar of motions to discharge committees and will be called up for consideration on May 5. An effort will then be made by many of the Democrats and "progressives" to bring the bill out on the floor of the House for action without a hearing. Apparently no very serious effort has been made to have the bill considered in the committee but, according to a statement made by Representative Huddleston, it has apparently been the purpose all along to try to have the bill considered on the floor of the House rather than by the

committee. A short hearing was held by the Senate committee at which the proponents of the bill concluded their statements in a very brief time, in marked contrast with their practice at previous hearings, and after the railroads had been heard in opposition to the bill the hearing was rather abruptly terminated, after which President D. B. Robertson of the Brotherhood of Locomotive Firemen and Enginemen issued a statement to the press predicting that a majority of the Senate would vote for the bill.

The members who signed the motion included 123 democrats and 28 republicans, of which ten were republicans from Wisconsin, one socialist, one independent and one farmer-labor. The entire Wisconsin delegation signed.

Denial of the charge made by Representative Barkley that the House committee on interstate and foreign commerce had "refused" to give a hearing to the labor bill was made by Chairman Winslow of the committee in a speech in the House on April 18. Mr. Winslow said that in handling nearly 200 bills which had been referred to the committee it has not been possible to hold hearings on all and that the committee up to date has merely devoted its time to other bills in which more of its members were interested and which had been introduced before the labor bill. In the 85 available days since the committee was organized, he said, it has held meetings to the number of 60 and in addition there have been 23 meetings of subcommittees. He showed that, at various meetings when the future program had been under discussion, Representative Barkley had moved to take up various other bills without referring to his bill, that as late as April 1 it had been he who proposed holding hearings on the locomotive inspection bill which the committee has reported. He said that at the last meeting at which there had been a contest as to which bills should be taken up next the committee had voted to hold hearings on the "truth in fabric" bill, with the understanding that after that it would reopen the whole field of possible inquiry and consideration and that the Barkley bill, with other transportation bills, would come up for direct consideration as to procedure. In addition, Mr. Winslow said, he did not remember a single application for consideration of this bill "except from a committee of four or five representing the four great brotherhoods of the railway employees, who came to see me 30 minutes before we went into session on the morning of the day we had set to determine a schedule, and they insisted that that morning, not the next morning, but that morning, we determine to take up this bill forthwith. Aside from that we have had no urgency whatever for the consideration of this particular bill." Mr. Winslow also pointed out that although the Senate committee had held hearings on the bill it had shut off most of the witnesses who desired to appear against it.

Representative Huddleston said that the bill to discharge a committee after having failed to give consideration to a bill for 30 days was particularly intended for just such a situation. "The representatives of the labor organizations had analyzed the committee on interstate and foreign commerce before their bill was introduced," he said: "they knew the bill would never be heard and that the only chance for its passage was to bring it before the House under the operation of the 'committee discharge' rule."

Senator Gooding's resolution directing the Interstate Commerce Commission to secure information regarding the expenditures of the railroads "for the purpose of creating public interest favorable to railroad sentiment," was reached on the unanimous consent calendar of the Senate on April 21 but was objected to by Senator Reed of Pennsylvania, who said he would like to have an opportunity to look into it. Senator Gooding urged the senator not to oppose its present consideration, saying the resolution was approved unanimously by the committee on interstate commerce. Sen-

ator Bruce of Maryland said that the senator was mistaken, that he had distinctly reserved the right to object to the resolution when it came to the floor of the Senate. Senator Gooding then gave notice that the next time the calendar is called he would move to take up the resolution for consideration.

The bill directing the secretary of the interior to withhold until March 4, 1927, his approval of the adjustment of the Northern Pacific land grants under the act of July 2, 1864, and the joint resolution of May 31, 1870, and also to withhold the issuance of any further patents and muniments of title until Congress shall have made a full and complete inquiry of the subject for the purpose of considering legislation to meet the respective rights of the railroad and of the government in the premises, was passed by the House on April 21 without discussion. The bill provides for the appointment of a joint committee of both houses of Congress to make an investigation. The House committee on public lands has recently completed a preliminary hearing as a result of which the bill was reported.

The House also passed on April 21 the bill introduced by Representative Dyer of Missouri, H. R. 4168, to punish the unlawful breaking of seals of railroad cars containing interstate or foreign shipments, the unlawful entering of such cars and the felonious asportation of such freight or other articles into another district of the United States.

Representative Hill of Washington has introduced a bill to amend the fourth section of the commerce act similar to the amended Gooding bill recently reported by the Senate committee on interstate commerce.

The House committee on labor has favorably reported the bill introduced by Representative Wolff of Missouri to prohibit the transportation of strikebreakers across state lines without giving them notice that a strike or lockout exists at the point of destination. The bill came up for consideration on the unanimous consent calendar on April 21, but was objected to by Representative Blanton, of Texas.

PERCY COTTON, inspector of sleeping and dining cars between Winnipeg and Edmonton, will be sent by the Canadian National Railways to act as demonstrator in the equipment exhibit which will be displayed at the Empire Exhibition at Wembley, Eng. *



From the New York Evening Post

Illinois Central Improvements Cost \$50,000,000

Net in 1923 Slightly Less Than in 1922 But Dividends Are
Earned Practically Twice Over

THE ILLINOIS CENTRAL annual report for 1923 again gives evidence of that property's outstanding able management, favored financial position and earning power. For the year the road handled the largest business in its history. It showed the usual ability to earn a substantial margin over its dividends. The really striking feature of the year's operations, however, was the unusually large sum spent for additions and betterments, nearly twice as much

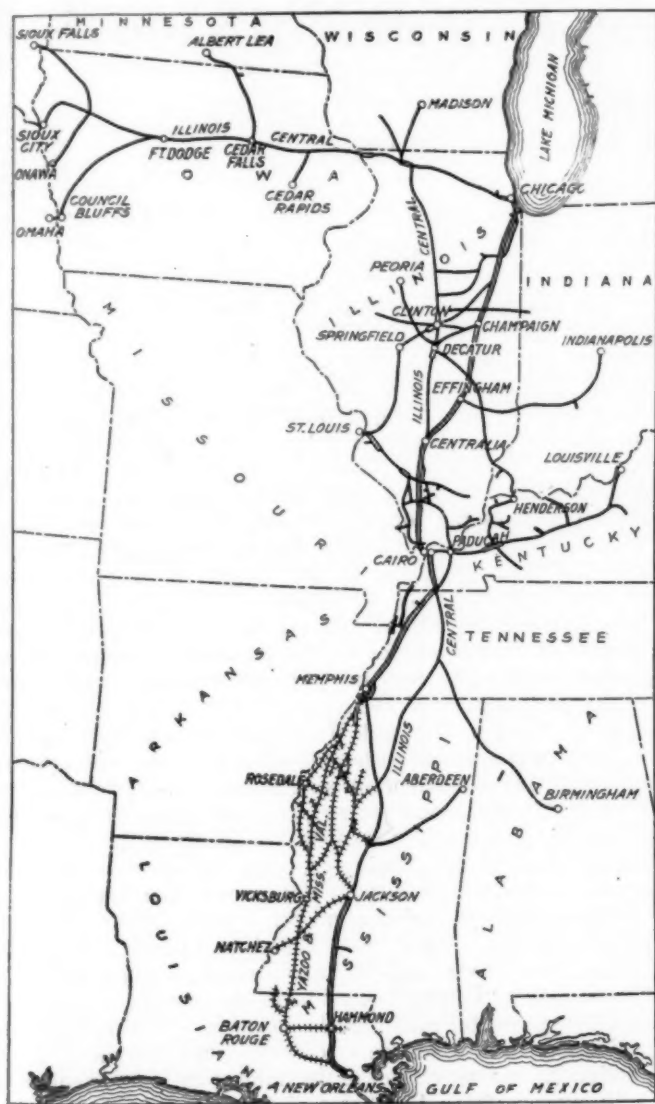
The Illinois Central annual report covers only the 4,840 miles of the parent company. The earnings of the Yazoo & Mississippi Valley and the other subsidiary companies are included under other income. The parent company's net operating income, or net after equipment and joint facility rents in 1923 was \$22,906,244 or \$1,005,955 less than in 1922. An outstanding characteristic of Illinois Central operations has been the remarkable manner in which it recovered from the adverse conditions of the war and federal control periods and also the marked increase in its traffic and net income in the past four or five years. A good measure of comparison is with the standard return for operations during the period of federal control—or the average net operating income for the three years ended June 30, 1917. The Illinois Central standard return was \$16,282,374. The 1923 net operating income was no less than 141 per cent of this amount. Of course, there has been a substantial increase in the property investment in the intervening period. Unfortunately the Illinois Central does not show in its annual report a figure of the percentage return on its property. The increase in the property investment account since 1917 has been 79 per cent.

There is nothing particularly disappointing in the fact that the Illinois Central's 1923 net return was not quite as great as that of 1922. First, the decrease was small and second, 1922 was the best year in the company's history. As a matter of fact the decrease is readily explained by the large sums spent for maintenance—particularly maintenance of way. Expenses charged to the latter account in 1923 were 3,868,081 greater than in 1922, an increase of 18.83 per cent.

Handled Largest Business in History

The Illinois Central in 1923 handled the largest business in its history. Revenue ton-miles were 6.49 per cent greater than in 1922. They were 10 per cent greater than in 1920; 65 per cent greater than in 1916; nearly double the totals of 1913 or 1914. There are few if any roads that have had such a marked expansion in their traffic. The increase in ton-miles has not been due to increased mileage because the mileage today is only about 80 miles greater than it was in 1914. It has been due presumably to the gradually increasing industrial importance of the South, to the growing traffic at the port of New Orleans, to the normal growth generally of the Illinois Central territory and the sustained ability of the property to handle expeditiously the traffic that was offered to it.

The Illinois Central will be remembered as not having been bothered as seriously as most roads by the railway shopmen's strike of 1922; it had rather better success than most roads in holding its men on the job. It also handled practically its normal tonnage of coal. In other words, bituminous coal constituted the usual approximate 40 per cent of its total revenue tonnage. The mines in Illinois Central territory were union mines and were closed during the strike; that the road was able to handle a practically normal coal traffic notwithstanding this fact was because it was not bothered by the shopmen's strike. Equipment was in such condition that it was in a position to handle coal from non-union territory that its neighbors were not in a position at the time to carry. There were some observers who thought that possibly the property was assisted by some such special advantage as this and that this was the principal reason that it was able to handle the record-breaking traffic in that year. The road



The Illinois Central

as in any previous year and nearly equivalent to the total spent in the three immediately preceding years.

Net after charges in 1923 was \$15,485,074 covering the 6 per cent preferred dividends (\$642,204) and the 7 per cent common dividends (\$7,666,438) nearly twice. The 1923 net was \$604,602 less than the figure for 1922 which was \$16,089,676. The 1922 net was the largest in the company's history. There has been only one other year in Illinois Central history besides 1922 in which the net reported for 1923 has been exceeded and that was in 1916.

was, of course, favored in 1922, but the fact that the traffic record was again broken in 1923 indicates that it was a permanent condition that assisted it and not a temporary advantage alone.

Increased Maintenance Expenses

Total operating revenues in 1923 amounted to \$165,626,982, 6.95 per cent above those of 1922 and the greatest in the company's history. The total operating expenses were \$132,429,231, the greatest in the company's history with the exception of 1920, when they were about \$2,000,000 greater due to the high cost situation ruling at that time. The 1923 operating expenses exceeded those of 1922 by 11.16 per cent.

There were increases of 18.83 per cent in maintenance of way expenses; of 8.86 per cent in maintenance of equipment expenses and of 10.82 per cent in transportation. The operating ratio was 80, which seems slightly higher than might be expected. The transportation ratio—percentage of transportation expenses to total operating revenues—was 37.4 which also seems a bit higher than one might expect in view of the other conditions.

The large increase in maintenance of way expenses is attributed in part to the increased traffic and to the extensive road and Chicago terminal work carried on during the year. The increase in maintenance of equipment expenses of 8.86 per cent, while sizeable enough, was much smaller than the per cent of increase reported for the railroads of the country as a whole. The increase is attributed to the heavier traffic. It amounted to about \$3,200,000. There was an increase of \$2,646,000 in repairs to freight, passenger, and switching locomotives, of \$593,000 in repairs to freight cars and of \$579,000 in repairs to passenger cars. Other increases in the depreciation accounts were compensated for by a reduction in the item of "Other Expenses" which, in 1922, amounted to \$2,004,000 but in 1923 to but \$113,000. This item reflected the cost of the shopmen's strike.

The fact that the Illinois Central had an increase in 1923 over 1922 of but 8.86 per cent in its maintenance of equipment expenses whereas the roads of the country as a whole had an increase of 17.1 per cent, shows how much better off the Illinois Central came through the strike than most roads. because it means that the Illinois Central had a much smaller proportion of deferred equipment maintenance to make up. With reference to equipment condition, the details show that the road began the year with 15.4 per cent of the locomotives awaiting repairs requiring over 24 hours and ended it with 10.2 per cent. Bad order cars were reduced from 6.0 per cent on January 1, 1923, to but 3.5 per cent on January 1, 1924. All of these figures indicate most unusually favorable conditions.

Operating Statistics

Illinois Central operating statistics, as reported to the Interstate Commerce Commission, include the Yazoo & Mississippi Valley. The trouble with these operating statistics as a whole is that they are produced in such volume that it is difficult to secure from them, at a glance, an adequate picture of favorable or adverse conditions. The Illinois Central figures are so uniformly good that conditions in its case are

somewhat different. A selection of the figures for 1923, with comparison for 1922, follows:

SELECTED ILLINOIS CENTRAL OPERATING STATISTICS
(Including Yazoo & Mississippi Valley)

	1923	1922
Miles operated	6,190	
Net ton miles (thousands)	18,359,172	16,752,921
Miles per car per day	41.1	38.7
Net tons per loaded car	28.3	28.0
Net ton miles per car day	74.6	70.7
Miles per train hour	11.3	11.3
Net tons per train	764	761
Net ton miles per train hour	8,600	8,611
Miles per locomotive day	79.3	74.7
Lb. coal per 1,000 gross ton miles	148	145

Large Improvement Program

One of the principal reasons that the Illinois Central has had such marked success in its operations in recent years has been its readiness and its ability to spend money where it would do the most good. Sums spent for additions and betterments have usually been heavy as shown by the following tabulation which includes figures for the subsidiary lines.

NET CHARGES FOR ADDITIONS AND BETTERMENTS

Year ended June 30		Year ended Dec. 31	
1914	\$11,814,018	1919	\$9,444,414
1916	6,097,616	1920	17,295,943
		1921	21,120,038
		1922	17,742,565
		1923	50,729,721
Year ended Dec. 31			
1916	4,417,472		
1917	15,642,691		
1918	27,197,480		

The charges for additions and betterments in 1923 are seen to have totaled \$50,729,721, nearly twice as much in the best previous year, 1918, or nearly as much as was spent in the three years, 1920, 1921 and 1922, in none of which years were the capital improvements small. The really striking thing in the situation, however, is the program announced for 1924, which is expected to total an additional \$40,000,000. Truly, a road that is ready to expend for capital account the sum of \$90,000,000 in two years' time must be managed by optimists who have extremely good reasons for their assurance in the future growing prosperity of their property. The sum spent in 1923 was divided approximately half and half between road and equipment. The number of projects under way is unusually lengthy. It included large sums for the Chicago terminal improvement work, continuation of the large project at Markham yard between Harvey, Ill., and Homewood, an extensive amount of work in connection with double tracking at various points, of which the most important single project is between Central City, Ky., and Dawson Springs, Ky.—41 miles, various grade reduction projects, new stations at various points, new coal chutes, signals, etc. During the year 469 sidings—79 miles of track—and 160 industrial sidings were built or extended.

The amount of money spent for new equipment amounted to \$26,389,463. There were added 15 Mountain type passenger locomotives, 120 Mikado freight locomotives, 25 of the so-called "Central" or Mikado type freight locomotives, and 5 eight-wheel switching locomotives. Twenty-one Consolidation locomotives were converted into Mikados. Locomotives of various classes to the number of 55 were equipped with superheaters. Purchases of freight cars totaled 13,134 and 6,772 freight cars were retired. At the end of the year

ILLINOIS CENTRAL RESULTS, 1914 TO 1923

Years ended Dec. 31	Mileage	Revenue tons carried	Revenue ton-miles	Tons one mile per mile of road	Average ton-mile, haul	Revenue per ton-mile, cents	Revenue train load	Revenue car load	Total operating revenues	Total operating expenses	Net operating revenue	Net after charges
1914	4,771	\$31,595,884	\$7,634,507,000	1,600,284	242	0.558	423	23.81	\$64,339,820	\$49,401,009	\$14,938,810	
1915	4,767	32,412,182	7,738,180,000	1,623,138	239	0.552	480	23.91	63,804,079	49,019,942	14,784,138	
1916	4,767	37,046,832	9,156,871,000	1,920,972	247	0.540	550	24.09	73,740,266	52,843,149	20,897,117	\$17,227,202
1917	4,766	42,460,189	11,230,070,000	2,356,268	264	0.520	623	26.94	87,144,787	62,339,834	24,804,952	15,191,326
1918	4,778	45,853,934	12,441,048,000	2,603,672	271	0.637	639	28.73	107,320,261	90,252,035	17,068,226	10,956,702
1919	4,793	38,245,714	9,994,435,000	2,085,119	261	0.759	649	27.01	107,886,835	99,262,712	8,624,123	12,168,919
1920	4,799	49,233,079	13,724,283,000	2,859,549	279	0.774	660	30.06	145,154,272	134,181,514	10,972,758	13,571,122
1921	4,799	40,415,089	11,084,094,000	2,309,489	274	0.966	634	28.62	141,127,066	116,852,333	24,274,733	9,700,794
1922	4,784	47,670,424	14,151,817,000	2,957,834	297	0.847	700	28.14	154,860,387	119,129,269	35,731,118	16,089,676
1923	4,840	55,110,674	15,069,986,000	3,113,473	273	0.843	681	28.41	165,626,982	132,429,231	33,197,751	15,485,074

the company owned 1,768 locomotives or 166 more than at the end of 1922. The total tractive effort was 71,082,703 lb., or 9,150,000 lb. more than at the beginning of the year. The freight cars owned at the end of the year totaled 72,249 or 6,423 more than at the beginning of the year and the total carrying capacity of 3,040,245 tons represented an increase of 285,675 tons.

A comparison showing the increase in Illinois Central equipment follows:

	EQUIPMENT IN SERVICE		
	June 30, 1914	December 31, 1918	December 31, 1923
Locomotives, number	1,448	1,570	1,768
Locomotive tractive effort, lb.	43,893,766	54,214,989	71,082,703
Freight cars	60,161	65,654	72,249
Freight cars, tons capacity	2,467,995	2,737,780	3,040,245

The Illinois Central's plans are to spend \$45,000,000 for capital improvements in 1924. This amount includes \$10,000,000 on the Chicago terminal project, more than \$6,000,000 on new lines, \$1,146,000 for bridges, \$1,000,000 for grade reparation projects, \$1,389,000 for heavier track materials and approximately \$10,400,000 for the rebuilding of equipment. In addition it has carried over \$8,000,000 unexpended from 1923, for the last named purpose and \$3,400,000 for roadway improvements of which \$1,580,000 is for second track. The \$6,000,000 for new lines mentioned in the 1924 budget includes principally the first year's work on the new cut-off from Edgewood, Ill., to Fulton, Ky., 169 miles, one of the largest projects of its kind now under way in the United States.

Private Operation Recommended for Germany

Dawes Committee Sees Great Revenue Possibilities in Railways If Efficiently Operated

THE GOVERNMENT-OWNED and operated railways of Germany have recently undergone a reorganization* which has placed their management in the hands of a public corporation, the organization of which resembles as nearly as possible that of a private corporation, but if the report of the Dawes committee on reparations is accepted and put into operation, the railways will be turned over entirely to private operation with some government participation and control.

Under the plan of the Dawes committee, the railways are to be used to secure the payment of reparations and this committee accordingly made a careful study of their organization and revenue-producing possibilities. The actual work of investigation in this connection was made by two railway experts, Sir William Ackworth and M. Leverve, one British and the other French, and their recommendations were generally accepted by the committee, which reported as follows:

We have conducted, with the assistance of two eminent railway experts, a close examination of the situation of the German railways. The subject is an important one, for the railways have been operated since the armistice at a constantly increasing loss, which has involved heavy burdens upon the German budget. Most, if not all, railway systems have passed through a period of great difficulty since the war from causes which were largely beyond their control. It is clear, however, from a study of the report drawn up by the experts, that the greatest difficulties were of the Germans' own making. The German railway administration cannot but plead guilty to two serious charges. In the first place, as is proved by the reduction which it is now possible to make, they have been enormously overstaffed, even when all account is taken of the introduction of an eight-hour day and of peace treaty charges justifying temporary disorganization.

In the second place, the administration has indulged in extravagant capital expenditure, for which the official excuse is that construction was largely undertaken to ward off unemployment.

Railways Now Organized Like Private Enterprise

It is only just to observe that the situation has now improved out of reorganization, though more remains to be done. The German government has separated the railways from the ordinary administration and assimilated them in form so far as is possible to a business concern. Capital construction has been slackened and fares have, at any rate, been raised to a point where the railways are not only self-supporting, but can provide some profit.

These measures are, however, insufficient. The capital value of the railways is estimated by the experts on a conservative basis at 26,000,000,000 gold marks (roughly 6.5 billion dollars). They are unencumbered with old debts, for their prior charges were extinguished by the depreciation of the mark, and these prior charges absorbed half the gross profits in the pre-war period, which amounted to approximately 1,000,000,000 gold marks (\$250,000,-

000), in spite of the fact that it was the custom to include in operating and maintenance charges large expenditures which might properly have been charged to capital account.

Profits Not to Be Made at Public's Expense

The railway experts are convinced, and we share their conviction, that under proper management, under unified control, and with a proper tariff policy the railways can without difficulty earn a fair return upon their present capital value. Nor need it be thought that this improvement in profits will be made at the expense of the German people by increasing their fares and the cost of all goods transported by rail. It can be substantially provided by the more economical administration of the railways themselves.

In saying this we have not in mind inadequate wages, but rather the elimination from operating and maintenance charges of certain elements of waste and also expenditure more properly chargeable to capital account.

No Hope from Government Ownership

The railway experts arrived, however, with considerable reluctance at the conclusion that it would be useless to expect anything approaching the full measure of improvement which is possible so long as the railways remain in the control of the government. The whole spirit of the government's ownership in the past has been directed to running the railways primarily in the interests of German industry and only secondarily as a revenue producing concern, and in their opinion a complete break with old traditions is essential.

We accept their conclusions and we recommend the conversion of the German railways into a joint stock company. It is not our intention thus to deprive Germany of the administration of her railways in favor of the Allies; on the contrary, our plan demands only a modest return on the capital cost, and so long as this return is forthcoming we do not anticipate any interference in the German management of the undertaking. We would add that if, as the German government has itself proposed, the exploitation of the railways is divided into several systems this division should not affect detrimentally their financial unity.

Bonds and Stocks to Be Issued

The committee recommends that there should be paid from the German railways 11,000,000,000 gold marks (\$2,750,000,000) to be represented by first mortgage bonds bearing 5 per cent interest and 1 per cent sinking fund per annum. The capital cost of the German railways computed on a gold mark basis is estimated by our experts at 26,000,000,000. The net earnings of these railways before the war, after liberal and indeed exaggerated charges to operating and maintenance, were as high as 1,000,000,000. The interest and sinking fund on these debentures represents less than 3 per cent of the capital cost, which is a very modest charge on the capital investment compared with that required in many other countries of the world. Realizing that during the period of reorganization of the railways full interest and sinking fund charges should not be required, we think payments on account of interest should be as follows:

*See item on this subject in the Foreign Railway News column.

1924-25, 350,000,000 gold marks (\$87,500,000).
 1925-26, 465,000,000 gold marks (\$116,250,000).
 1926-27, 550,000,000 gold marks (\$137,500,000).
 1927-28 and thereafter, 660,000,000 gold marks (\$165,000,000).
 This is regarded as a normal year.

Government to Participate in Ownership

In addition to the 11,000,000,000 of bonds the new railway company is to have a capital of 2,000,000,000 gold marks (\$500,000,000) of preference shares and the remainder of its capital cost, namely, 13,000,000,000 (\$3,250,000,000) is to be represented by common stock. One and one-half billions of preference shares are to be set aside in the treasury of the company for sale to private persons to provide funds for the payment of existing indebtedness and future capital expenditures. The proceeds of the sale of the other 500,000,000 of preference shares and all of the common shares are to go to the German government.

German Control

The railways are to be managed by a board of eighteen directors, of whom nine will be chosen by the German government and the private holders of preference shares, and the other nine will be named by the trustee of the bonds, five of whom may be German. It is therefore contemplated that the board will have fourteen German members. The chairman of the board and the general manager of the railways will be German.

It is contemplated that the railway company will be free to conduct its business in such manner as it may think proper, provided always, however, that the German government will have such control over its tariffs and service as may be necessary to prevent discrimination and to protect the public. Such government control, however, is never to be exercised so as to impair the ability of the railway company to earn a fair and reasonable return on its capital cost. The Railway Commissioner represents the interests of the bondholders. His principal duty will be, in the absence of default in interest, to receive reports, statistical and financial returns, and generally to see that the interests of the bondholders are not menaced.

The Experts' Report

Appended to the report of the Dawes committee are two "annexes" numbered III and IV which give the recommendations of Sir William Ackworth and M. Lèverve in detail. These experts first estimate the value of the railways to be not less than 26 billion gold marks, substantiating this estimate with data drawn from many sources. They give the mileage of the lines at 32,900 (53,000 kilometers); locomotives, 30,850; passenger cars, 69,253; freight cars, 748,753. Much of this equipment they say, is new and its general physical condition is much better than before the war.

They then give the opinion that these railways ought to earn a net of one billion gold marks per annum without great difficulty if they are properly organized. They point out that the failure of the railways to earn profits in recent years does not contradict this view, since even in countries in which there was no currency depreciation the railways had hard sailing for some time after the war—hence the difficulty of the German railways is temporary and will pass with stabilized conditions and efficient administration. They point out also that wages of railway employees in Germany are only about 75 per cent of pre-war, whereas in most countries they are much greater; and that some wage increases may be granted and that the potential earning capacity of the railways will still not be prejudiced.

At the present time there is a transportation tax which will, it is estimated, yield over 200,000,000 gold marks in 1924. The proceeds of this tax, the experts recommend, should be turned over to the Reparations Commission. Gross revenues for the railways of 4 billion marks are now said to be in sight. If the operating ratio can in the next few years be reduced to 80, then the additional 800,000,000 marks of the billion expected will be obtained.

The experts believe that these results can not be obtained under government ownership. They say:

It is evident, in the first place, that the railways in common with every other German undertaking can only give satisfactory results if the currency is stabilized and political and social tranquility prevails. As for the measures to be taken to obtain the results indi-

cated above we may repeat the railways must be worked as a commercial enterprise, that is to say, with the determination, on the one hand, so to fix the rates as to produce all the receipts that can be obtained, and, on the other hand, to reduce the expenditure to a minimum.

Government Administration Wasteful

The management of the German railways has hitherto been far from working to this standard. We shall show later that since the war the tariffs both for passenger and freight have been kept too low, with the object of encouraging industry and commerce and especially of favoring German export. The tariffs are still regarded as they were before the war, primarily as a weapon in the hands of German trade and only secondarily as a source of railway revenue. On the other hand, the expenditure on rolling stock and works of every kind has been extravagant since the war and the staff employed is at the same time much too large and badly paid.

It is therefore indispensable to make a radical change in the policy followed by the railways hitherto. But we do not believe that any German management will have the strength necessary to fight successfully against the traditional mental attitude unless there is behind it the constant pressure of an expert control established and maintained in the interests of the Allies to supervise the management in the matter both of tariffs and of expenditures.

Private Operation Essential

Further, we regard a complete change in the organization as essential. We think that the recent establishment of a separate undertaking with a separate budget and with a certain measure of independence, though it is a move in the right direction, does not go far enough. The undertaking, though separate, still remains a government undertaking. In our judgment it is necessary to go further, and while leaving to Germany the ownership of the railways to entrust the management for a period of years to a commercial company which will be German, but with a board of directors containing representatives both of the shareholders and of the creditor Allied Powers. What this period of years should be, how the company should be constituted, with what powers and with what restrictions, is a matter which we understand the committee itself will deal with. We need only urge that the company and its management must have adequate freedom in the matter both of tariffs and operation. And if we may vary the phrase of Dr. Sarter, we think that a commercially managed railway company ought to treat the attainment of an adequate net revenue as of primary importance, while at the same time having regard to the progressive development of the economic life of the country and being careful not to kill or even impair the productive capacity of the goose that lays the golden eggs.

The experts recognize that, according to German law, the consent of the states is necessary if the federal government is to alienate or put any charges upon the railways and they recommend that the federal government proceed in the customary manner to secure this authority. They recognize also that a law involving a change in railway organization to conform to their recommendations will have to be approved by the Reparations Commission.

The 11 billion marks of bonds issued by the German railways will be delivered to the Reparations Commission on reparations account. These bonds will bear 3 per cent interest the first year; 4 per cent plus a bonus of 25,000,000 marks the second; and 5 per cent for the third year and thereafter—plus amortization. Service on this bond issue is to be taken care of by reservations from gross receipts. These bonds are to be substantially a first mortgage on the property. Provision will be made for the ultimate reversion of the railways to the government after amortization of the debt is complete.

DURING THE MONTH of February 3,885 cars of fruits and vegetables were inspected at 10 of the larger points in the West by the Western Weighing and Inspection Bureau, in 991 cars or 25.5 per cent of which damage was found. In 266 or 26.8 per cent of the cars the damage was due to freezing in transit, in 219 cars it was due to decay, over-ripeness, etc., in 151 cars or 15.2 per cent it was due to field or orchard diseases, in 111 cars or 11.2 per cent it was due to pilferage of one-half box or more, in 94 cars it was due to improper bracing, in 68 cars the cause was rough handling, in 61 cars the cause was field frost and in 3 cars the damage was due to poor containers.

Universal Treatment of Timber Will Save Money

Roads Can Effect Large Economies by Protecting Car and Bridge Lumber as Well as Ties

By H. S. Sackett

Consulting Timber Engineer, Chicago.

AN IMPORTANT responsibility rests upon the executives of our railroads in applying, to the greatest extent practicable, the practice of timber preservation and conservation. In order to grasp the full significance of this situation, it is necessary to consider the railroad industry as a huge individual consuming unit.

Shorn of technical detail, there are four phases of special importance which must commend themselves to those who are inclined towards maximum efficiency.

First, Financial Return: Based on actual past experience the potential profit from the necessary investment in the chemical treatment of the multitudinous forms of timber employed by railroads, over and above the interest on this investment for an average period of 20 years, will exceed 50 per cent and in some instances will reach 100 per cent. Special financing to permit such investment is not apt to encounter much difficulty in view of the proved earning power.

Second, Public Policy: Voluntary assumption of the obligation of practicing timber conservation now (particularly when this is the most profitable course) will avoid doing so under the compulsion of legislative enactment, which is inevitable in the not distant future as a result of the gradual awakening of the general public to the depleted state of the nation's timber resources. Although the increasing tendency towards wider government supervision of public utilities may be considered unsound in many respects, it is, nevertheless, a factor that must be dealt with, at least during this generation. On the other hand, the right must be conceded the government—in fact, it is its duty—to regulate the consumption of the natural resources that belong not alone to the present generation, and to require, of the largest consumer of timber, the elimination of all preventable waste. Another consideration is that any saving in maintenance expenses will be reflected in the net revenues of the railroads, either in increasing their earnings or in decreasing the cost of transportation proportionately.

Third, Future Timber Supply: Neither now nor at any future time within the scope of our present vision will the railroads be able to operate without timber: The dream of substitution is untenable. Timber preservation practiced now to the limit of practicability will reduce the consumption by the railroads 35 per cent, or will save enough in 20 years to supply the needs of the entire United States for a whole year, something like sixty billions of board feet of timber. The direct benefit to the railroads of such a policy will be its influence on checking the continual upward trend of prices of lumber, timber and ties. Otherwise who knows what the cost may be 25 years hence and where the more than ten billion board feet required yearly will come from.

Fourth, Capital Investment in Plants: This need not be of immediate concern to railroad executives. At present the wood preserving industry possesses a capacity available for expansion equivalent to, roughly, 250,000,000 cu. ft. of timber and as this is absorbed there will be no difficulty in providing additional plants and facilities to give chemical treatment to the aggregate of approximately 425,000,000 cu. ft. of timber, which it is estimated should be treated annually by the railroads. It may be stated, with limited reservations, that this work can be undertaken more econom-

ically by specialized organizations, such as the commercial timber treating plants, than by the railroads themselves; however, this holds true of many other railroad operations which are contracted to outside parties. If the railroads were required to provide capital for the building of treating plants, in addition to the cost of the processes, the problem of financing would be a formidable one. Happily the wood preserving industry has reached a point of importance where additional capital for reasonable expansion is readily available and the prospects are that ten years hence the volume of treated timber consumed will have quintupled.

A Panoramic Viewpoint Requisite

No attempt will be made to present refined details. That must be left to the experts now employed by the individual systems who can prepare complete programs with scientific exactitude. Technical information and specific service records have been accumulated and compiled for more than 20 years by the American Wood Preservers' Association, an organization composed in large part of railroad men connected with the timber treating industry who have given the result of their best experience and built up a standard of excellence in specifications to which other similar bodies may well aspire.

But in spite of tremendous effort the application of this vital economy is still restricted to, perhaps, a quarter of its present possibilities, with its ultimate benefits to the railroads, as well as to the nation, a matter of optimistic conjecture. The explanation may well lie in the fact that entirely too much attention has been accorded small isolated structures which form a negligible fraction of the total requirements and which, divided and subdivided into various departments and activities, actually become mere details in comparison with the really gigantic undertaking of operating a major railway system. Often buried in a mass of technical details concerning processes, chemicals, relation to existing operating practice and customs; balked at times by prejudice and lack of understanding, the fiscal and physical benefits dwindled into comparative insignificance. Only by viewing the problem in its aggregate proportion can a correct understanding be reached of the tremendous volume of material and large sums involved. The magnitude of the panorama thus exposed must impress one, particularly when required to anticipate future needs and developments, with the imperative of immediate checking, to a far greater extent than is now done, of this persistent drain upon resources.

The savings realized from the universal preservation of ties have been shown in a previous discussion (*Railway Age*, February 16, page 423) to hold promise of an aggregate net profit of \$70,000,000 annually and a reduction in tie renewals of 35,000,000 annually. Ties, however, represent less than half of the average yearly timber requirements of the railroads. Applying the same principle to the remaining volume of timber consumed and considering all the railroads as a single consuming unit this subject grows decidedly in importance.

Loss From Decay in Freight Cars

The decay of timber and lumber in freight cars represents a yearly loss of approximately \$60,000,000—in material,

labor and loss of revenue, equivalent to somewhat over 15 per cent of the average yearly gross revenue per car. There are more than 1,500,000 freight cars in service which contain wood where it is subject to decay.

A very thorough investigation of this subject, extending over a period of two years, was made by special committees of the American Wood Preservers' Association which reported that 80 per cent of the repairs necessary to wood and composite freight cars were caused by decay which would have been prevented by chemical treatment to the extent that the respective wooden members could have been made to last the full period of their mechanical usefulness.

Applying these data to the entire group of these types of freight cars developed that each one of them would require equivalent repairs over a period of seven years, based on an average annual percentage of 15 per cent of those in service; therefore, the aggregate minimum loss would in that time exceed \$200,000,000 on this one item alone.

The price of prevention is estimated at approximately \$50 per car and the profit upon the expiration of the assumed period of seven years would be \$35,000,000, after paying 7 per cent compound interest on the investment for an equal period.

It has been argued that all-steel cars would avoid this loss. However, these also possess repair troubles of their own and without entering into a discussion of this phase at the present time it may be said that freight cars of the composite type, in which all lumber and timbers have been given preservative treatment with zinc chloride, sodium fluoride, creosote, or combinations of these salts and oils, are still the most economical per year of service.

The parts of freight cars that it is most necessary to preserve chemically are the sub-sills, nailing strips, posts, braces and roofing of box cars; the entire wood substructure, interior framing and superstructure of refrigerator cars; practically all of the wood in stock cars and coal cars; the decking and timbers in the substructure of flat cars and even caboose and similar cars provide opportunities for the employment of treated timber.

Timber, Lumber, Poles and Piling

For the sake of brevity the remaining volume of timber requirements will be grouped into one unit: This includes bridge timbers, switch and bridge ties, piling, wharf and dock timbers, crossing planks, structural timbers, lumber and planking, poles, fence posts, etc., representing a total of one and one-half billion board feet, all of which should be treated by one of the standard processes. It is estimated that preservative treatment thereof would require a further additional investment of \$25,000,000 yearly. The resulting saving would be equivalent to a reduction in annual cost of approximately 25 per cent and after paying 7 per cent interest for a period of 25 years there would remain a net profit of \$19,000,000, or over 75 per cent on the original investment in treatment.

This analysis, therefore, reveals that the first cost of universal timber preservation, based on the average yearly requirements, would be in the neighborhood of \$50,000,000 in addition to the present expenditure for this purpose and that this investment would return over and above all carrying charges nearly 150 per cent profit, while at the same time reducing the total timber consumption of the railroads 35 per cent per annum. Admittedly, from 5 to 15 years would elapse before these benefits could be completely reflected in reduced expense and requirements, but the actual returns, beginning after five years in the case of ties, after four years in the case of cars and after ten years in the case of miscellaneous timber and lumber, are so considerable that even the pyramiding of the carrying charges could not wipe out the profit.

Against this somewhat heavy increased expenditure must

be charged the present waste of timber due to decay, and the attendant losses in labor, losses in revenue due to interrupted movements and the many other items which it is almost impossible to reduce to figures in order to give due weight to the present excessive burden which, although unintentionally, is rather effectively hidden by the elaborate accounting systems in use. The direct cost of this waste is, nevertheless, very real and if calculated over a period similar to that during which investment in extended preservative treatment must be made without immediate returns, far overshadows the latter, showing, in fact, a continually increasing credit balance.

Preventable Decay Costs \$100,000,000

The nearest approach to an estimate of the present annual loss due to the preventable decay of timber and ties is \$100,000,000 per annum, involving some 425,000,000 cu. ft. plus labor and interruptions to the production of transportation. A very diligent search was made and great masses of statistics and data had to be handled and studied to develop a basis for the estimates herein presented, but after all they are merely a gesture in comparison to the direct and indirect benefits to be derived from a maximum of efficiency in the utilization of all forms of timbers in the railroad industry. Most certainly, the matter of timber preservation is not a "detail," but a major problem that warrants the serious consideration of the highest executives. There is involved, principally, a most important fiscal phase, as well as a question of policy that may become of far reaching political influence; to these, the technical modus operandi is quite secondary.



International

President and Mrs. Coolidge Return to the Capital After Having Attended Luncheon of the Associated Press in New York

Needles Succeeds Maher as N. & W. Executive

Have Had Similar Careers—Both Have Unusual Acquaintance with Operating Details and Personnel

AT A MEETING of the board of directors of the Norfolk & Western held at Philadelphia on April 22, A. C. Needles, hitherto vice-president in charge of operation and traffic, was elected president of the company to succeed N. D. Maher, who will retire, under the pension rules of the company, on May 1.

Mr. Maher has been president of the Norfolk & Western since January 1, 1918, except for that portion of the period of federal control when he was regional director of the Pocahontas Region. He has been associated with the Norfolk & Western since 1883 when he came to the road from the Penn-

the road to prosperity following its receivership which terminated in 1896.

The credit that is due Mr. Maher is, however, great. He was in charge of its operations for an extended period of years. Even at the time Mr. Johnson was elected president he had been associated with the property longer than had Mr. Johnson. As officer in charge of operations he built up the operating organization and carried on the work that supplemented the policies of his superior until he became president himself and was called upon to take up the larger work as well. The operating organization that Mr. Maher so built



N. D. Maher



A. C. Needles

sylvania. He was appointed general manager in 1904, and was elected vice-president in charge of operation in 1912. When he became president in 1918 he succeeded L. E. Johnson. Inasmuch as Mr. Maher has been president for a period of only six years, during a portion of which the road was operated by the Railroad Administration, it would possibly be going too far to say that in this short space of time he has been able to exercise any very marked influence on the broad executive policies of this prosperous and ably managed property. The reason for this is a very simple one; cycles of railway progress or retrogression are not evolved in such short spaces of time. The railroad was already a prosperous property when Mr. Maher became president and it remains a prosperous property today, assisted today measurably by the increased prosperity and improved strategic position in the coal market of the non-union coal producers in the road's territory. What Mr. Maher has done in this respect has been to continue the policies of Henry Fink and L. E. Johnson to whom has been given the credit of bringing

up, even before his election to the presidency, served to attract attention to his operating skill; and it was the admiration of every railroad officer who had studied it. It was characterized particularly by its combination of simplicity, effectiveness and morale, and in this respect was, indeed, almost unique.

With reference to the changes that now take place by the election of Mr. Needles and the retirement of Mr. Maher, possibly the most outstanding feature is the striking similarity between the careers of Mr. Maher, the retiring president, and Mr. Needles, the new executive. Both were educated in the North. Both entered railroad service on surveying work; both entered the employ of Norfolk & Western in 1883, and the progress of both to the presidency has been almost identical through the various positions in the operating department.

They have had very much the same experiences, and in large degree have exhibited the same personal characteristics. Both men are extremely reticent yet always outspoken when

occasion demands. Both are extremely modest regarding their personal achievements and neither will permit undue commendation of anything connected with themselves or with the road. Another outstanding characteristic of both is unswerving loyalty to the men under them. Mr. Maher, for instance, has for years maintained an "open door" policy, a light reed swinging door being the only obstruction to his private office. Any employee, no matter how humble his position, has always had access to Mr. Maher's office for friendly advice and help.

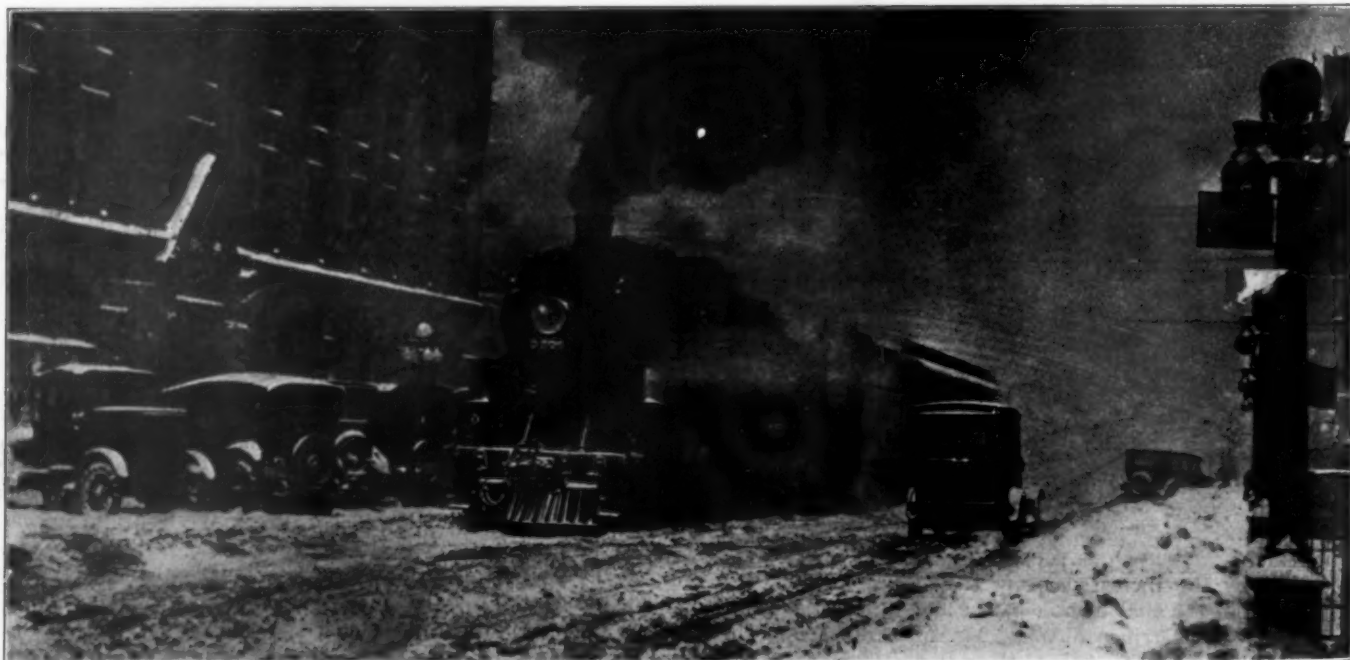
This singular similarity extends to the outstanding asset of both executives; both know as intimately as anyone could every inch of line and every veteran employee in the organization. Both men spend a great deal of time on the road and probably no executives in the country are in as constant touch with every detail of operation as these two have been in the last 20 years. Mr. Needles, particularly, knows more employees of road by their first name than any other man on the line. He consequently has the unanimous backing of the entire Norfolk & Western family.

Mr. Maher has for years been interested in the development of Hampton Roads and will probably devote a good deal of his time in the future to the work of the Hampton Roads Port Commission, of which he is chairman. This is a state body authorized by the Virginia legislature. Plans have already been presented for extensive development at this port and Mr. Maher's interest will probably result in increased activity. This work, of course, will be in addition to his duties as a member of the board of directors of the Norfolk & Western.

Nicholas D. Maher was born at Blairsville, Pa. He entered railway service in 1871 and until 1873 was engaged in survey work on the Pittsburgh, Virginia & Charleston. In 1873, he became a clerk in the office of the superintendent of transportation of the Pennsylvania, at Altoona, Pa., in 1874, becoming a clerk in the office of the general superintendent which position he held until 1883. On June 1, 1883, he entered the employ of the Norfolk & Western and served from that date until August 1, 1889, as chief clerk to the general manager. From August 1, 1889, to August 3, 1890, he was trainmaster of the Flat Top division of the road. He

was then promoted to superintendent of the Pocahontas division. In 1901 there ensued a period when he left the Norfolk & Western and served from June 21, 1901, to January 3, 1903, as general superintendent of the Seaboard Air Line with headquarters at Portsmouth, Va. On the latter date he returned to the Norfolk & Western as general superintendent. On February 1, 1904, he was promoted to general manager, being elected on July 1, 1907, also second vice-president. He was elected vice-president in charge of operation in November, 1912, and on October 14, 1915, first vice-president. His election to the presidency followed on January 1, 1918. He has served as president since that date except for the period from June 1, 1918, to March 1, 1920, when he served as regional director of the Pocahontas Region for the Railroad Administration.

Arthur C. Needles was born on January 10, 1867, at Baltimore, Md., and was educated in the public schools and at Swarthmore College. He entered railway service in 1884 as a rodman on the Washington, Ohio & Southern. His association with the Norfolk & Western began one year later when he entered its employ as a rodman, following which he served for a time as yard clerk and then as a brakeman. In 1884 he was made a yardmaster. He was yardmaster at Pulaski, Va., from April, 1887, to December 1, 1889, and from that date to August 1, 1890, yardmaster at Bluefield, W. Va. He was then appointed assistant trainmaster of the C. V. division, remaining in this position until 1896, when he was made assistant trainmaster of the Pocahontas division. From December 25, 1898, he served as trainmaster of the Radford division until June 22, 1901, when he was promoted to assistant superintendent of the Pocahontas division. On the latter date he became superintendent of the Shenandoah division; on October 6, 1902, he was transferred to the Norfolk division, and in December of the same year to the Pocahontas division. In February, 1904, he was promoted to general superintendent. He was appointed general manager on December 1, 1912, and elected vice-president in charge of operation on January 1, 1918. He served as federal manager of the Norfolk & Western during the period of federal control. Since January 1, 1921, he has held the title of vice-president in charge of operation and traffic.



Wide World

Empire State Express in Syracuse, N. Y., on a Wintry Day

ahontas
left the
to Jan-
ard Air
e latter
super-
to gen-
and vice-
opera-
st vice-
n Jan-
ate ex-
1920,
Region

at Bal-
and at
384 as
asso-
later
ich he
n. In
ter at
, and
field,
of the
when
ision.
f the
noted
On
doah
Nor-
Poca-
ed to
nager
ge of
nager
con-
vice-

General News Department

The Association of Railway Electrical Engineers will hold its semi-annual meeting on Thursday, June 12, at the Hotel Dennis, Atlantic City, N. J.

The boiler shop and three other buildings of the Missouri Pacific shops at Ft. Scott, Kans., were destroyed by fire on April 16; estimated loss \$30,000.

A fire at Buffalo, N. Y., on the night of April 18 destroyed a four-story warehouse of the New York Central, at Washington and Green Streets; estimated loss \$50,000.

The Interstate Commerce Commission has reopened its investigation into the question of the construction and repair of cars and locomotives for further proceedings relating to the equipment of the Central of New Jersey.

The Wabash, with the opening of the baseball season, will post the results of the various games of both major leagues immediately following the games in its parlor cars. Scores from all games will be wired by special correspondents to various cities along the Wabash.

The Erie is endeavoring to determine who of its commuters into New York has been traveling on its lines the longest, and to this end will award a prize to the record-holder. One entrant with fifty-five years to his credit died on April 23, leaving another with a record of fifty-three years, thus far, at the top of the list.

The Interstate Commerce Commission's report to Congress for March on the condition of railway equipment shows that during the month 5,083 locomotives were inspected; that 2,674 were found defective and 468 were ordered out of service. Also 99,234 freight cars were inspected, of which 4,461 were found defective; and 1,814 passenger cars, of which 41 were found defective.

The Union Pacific has organized a standardization committee which is visiting every shop on the system investigating methods and apparatus with a view to increasing efficiency. The committee consists of J. W. Highleyman, assistant superintendent of motive power and machinery, J. J. Kelker, superintendent of shops at Pocatello, Idaho, W. R. Ladd, superintendent of shops at Portland, Ore., and A. S. Norris, master mechanic at Los Angeles, Cal.

The Missouri-Kansas-Texas Railroad Employees' Hospital Association will give special attention to tubercular members of the organization. In the future all such patients will be placed in special private sanitoriums in Arizona, New Mexico, Colorado and other states so that they can have the advantage of the most scientific methods of combating the disease. In addition to having all their hospital and medical expenses paid by the association, the patients will be allowed \$25 a month each while in the sanitorium.

The Imperial Valley Flood

The Senate committee on claims has favorably reported to the Senate without amendment the bill to confer jurisdiction upon the United States court of claims to ascertain the cost to the Southern Pacific, and the amounts expended by it, from December 1, 1906, to November 30, 1907, in closing and controlling the break in the Colorado river; and to render judgment therefor.

B. & O. Fuel Conservation Moving Picture

The Chicago chapter of the International Railway Fuel Association held a special meeting Thursday evening, April 10, at the Hotel Sherman, Chicago, the feature of which was an unusual motion picture presented by W. L. Robinson, superintendent of

fuel and locomotive performance of the Baltimore & Ohio. Among other things, the chemistry of combustion is shown in this picture by means of animated characters, carbon being represented by a negro, oxygen by a police officer and hydrogen by a girl called the "Hydro-girl." This was the first showing of the film off the B. & O. lines.

Norfolk & Western Relief Department

The relief and pension department of the Norfolk & Western Railway has issued its seventh annual report, which is for the year 1923. The record shows, for the year, deaths from accident 24, from sickness 105, total 129; disabilities from accident 2,457, from sickness 5,411, total 7,868. Contributions by members during the year amounted to \$630,645; total receipts, including balance and interest, \$981,453. Disbursements on account of sickness, \$370,486; on account of accident, \$102,358. Balance on hand, \$508,609. The total membership is 19,687, which is equal to 71 per cent of the employees. The superintendent of the department is J. C. Snively, Roanoke, Va.

National Conference at Chicago

on the Crossing Problem

The National Association of Railroad and Utilities Commissioners announces a conference to be held at the Congress Hotel, Chicago, on April 30 and May 1 to discuss the highway crossing problem. The meeting is called in accordance with instructions adopted at the recent convention of the association in Florida. The subject of the protection or elimination of crossings has long been of prime interest but no definite agreement for action has been reached by the railroads or by the state commissions or by state or municipal officers. The commissioners desire a national conference of representatives of the carriers, the state regulating commissions, the governors, highway commissioners and municipal officers and representatives of the national automobile associations.

Train Accidents in January

The Interstate Commerce Commission has issued a memorandum in the same style heretofore issued quarterly, showing the record and classification of railroad accidents for one month, January, 1924.

The statement shows a total of 549 persons killed and 12,836 injured. No passengers were killed in train accidents. The totals of the principal items are: In train accidents, 32 employees and 8 other persons killed; 203 passengers, 150 employees and 45 other persons injured. Adding to the above the train-service accidents the totals are: 7 passengers, 149 employees and 364 other persons killed and 470 passengers, 3,237 employees and 795 other persons injured; a total of 520 persons killed and 4,502 injured. Adding industrial and other non-train accidents makes the total first given above.

Train Control versus Automobile Control

"To Save People from Too Much Hurry" is the title of a pocket-size pamphlet which has been issued, containing extracts from the recent address of A. H. Rudd, chief signal engineer of the Pennsylvania Railroad, before the New York Railroad Club, on the promotion of safety at highway grade crossings. The pamphlet has been circulated quite generally during the past week. The name of the publisher issuing the pamphlet is not given, but some of those who have received copies of it seem to take it as an appeal from the railroad company for public approval of the position taken by Mr. Rudd—that the millions of dollars called for by the government's automatic train control order might much better be spent for the separation of grades at highway crossings, or for other safety measures at crossings.

Operating Statistics of Large Steam Roads—Selected Items for the Month of February, 1924,

Region, road and year	Average miles of road operated	Train-miles	FREIGHT SERVICE				Ton-miles (thousands)		PASSENGER SERVICE				
			Locomotive-miles		Car-miles		Gross. Excluding locomotive and tender	Net. Revenue and non-revenue	Average number of locomotives on line daily			Stored	
			Principal and helper	Light	Loaded (thousands)	Per cent loaded			Serv-ice-able	Un-serv-ice-able	Per cent unserv-ice-able		
New England Region:													
Boston & Albany.....	1924	394	276,277	294,690	29,364	5,138	71.0	257,755	103,061	117	27	18.5	...
	1923	394	294,611	312,549	29,058	4,925	73.2	251,819	108,632	112	27	19.6	...
Boston & Maine.....	1924	2,455	524,626	580,596	50,671	11,613	74.1	572,904	242,648	354	124	26.0	43
	1923	2,455	530,944	580,202	49,052	9,682	75.2	491,828	216,532	316	137	30.2	2
N. Y., New H. & Hartf.....	1924	1,974	473,153	497,142	27,570	11,702	73.1	574,312	246,146	291	79	21.3	7
	1923	1,974	387,581	417,754	35,593	8,445	75.0	431,662	200,063	282	100	26.1	...
Great Lakes Region:													
Delaware & Hudson.....	1924	887	375,899	524,424	49,183	10,002	68.3	625,309	323,067	254	39	13.4	46
	1923	886	309,349	439,389	34,778	6,290	66.4	452,747	234,922	234	65	21.8	8
Del., Lack. & Western.....	1924	993	527,496	653,559	100,407	16,256	70.2	886,981	406,738	271	83	23.4	5
	1923	993	424,746	539,762	99,289	11,287	68.6	656,886	320,461	282	98	25.8	3
Erie (inc. Chi. & Erie)....	1924	2,325	1,025,183	1,160,015	89,114	34,643	68.7	2,067,919	982,496	654	121	15.6	130
	1923	2,309	1,089,495	1,265,208	55,202	34,958	72.7	2,047,821	1,028,014	589	179	23.4	1
Lehigh Valley	1924	1,356	610,587	675,877	71,939	16,880	67.8	981,842	464,733	466	95	17.0	78
	1923	1,317	401,728	454,179	57,703	9,378	67.2	597,362	309,204	280	264	48.5	1
Michigan Central	1924	1,827	628,329	651,228	21,207	20,029	66.9	1,052,300	414,352	287	48	14.4	20
	1923	1,827	583,273	602,581	22,913	17,577	70.4	915,103	390,263	300	83	21.6	9
New York Central.....	1924	6,447	2,322,680	2,628,098	182,683	76,857	63.2	4,682,426	2,093,636	1,239	421	25.4	212
	1923	6,469	2,392,446	2,787,602	217,703	72,831	64.1	4,453,639	2,089,622	1,208	518	30.0	15
New York, Chi. & St. L.....	1924	1,669	739,284	748,847	3,058	20,701	69.8	1,110,071	475,138	255	61	19.4	31
	1923	1,669	678,492	696,976	3,878	16,847	70.4	930,001	419,361	219	77	26.0	5
Pere Marquette	1924	2,227	421,849	446,493	11,327	10,507	69.2	573,706	273,073	189	21	10.0	9
	1923	2,182	338,502	355,250	5,982	8,141	73.6	445,288	219,042	162	39	19.4	...
Pitta. & Lake Erie.....	1924	231	153,982	157,634	1,577	5,165	60.1	385,534	218,302	63	18	22.1	...
	1923	231	163,820	168,292	673	5,069	62.4	379,879	219,339	59	16	21.7	...
Wabash	1924	2,459	725,705	747,374	12,289	20,166	70.9	1,095,008	469,145	312	42	12.0	...
	1923	2,418	526,744	557,828	7,463	15,428	76.6	783,505	348,279	246	93	27.5	...
Central Eastern Region:													
Baltimore & Ohio.....	1924	5,207	2,006,892	2,313,453	182,268	54,141	65.7	3,342,217	1,655,969	1,059	214	16.8	87
	1923	5,212	2,054,224	2,375,951	151,397	53,984	68.5	3,207,595	1,613,847	1,021	269	20.9	7
Central of New Jersey....	1924	692	273,069	305,024	42,140	6,524	62.7	415,069	202,890	237	42	15.0	29
	1923	695	281,012	307,722	35,287	5,505	62.1	361,684	181,567	198	71	26.4	...
Chicago & Eastern Ill.....	1924	945	279,406	285,756	4,811	6,958	61.8	443,251	221,462	121	48	28.4	12
	1923	945	259,405	267,433	4,330	6,196	64.7	386,829	199,654	111	61	35.4	4
Cleve., Cin., Chic. & St. L.	1924	2,376	776,720	824,940	17,607	22,949	63.0	1,486,200	736,202	335	93	21.7	2
	1923	2,377	686,853	721,841	6,454	19,932	66.0	1,238,296	611,659	313	128	29.1	...
Elgin, Joliet & Eastern.....	1924	460	136,922	154,241	9,371	4,093	65.8	315,164	169,306	94	12	11.7	9
	1923	460	137,219	153,079	9,386	3,895	67.2	296,664	164,874	84	16	15.8	...
Long Island	1924	393	43,568	49,736	8,819	581	60.1	34,782	13,645	40	12	22.9	1
	1923	393	43,401	55,901	7,864	510	58.2	30,724	11,842	42	11	20.5	...
Pennsylvania System.....	1924	10,937	4,609,289	5,027,734	374,888	122,687	66.1	8,020,451	3,969,081	2,770	741	21.1	96
	1923	10,884	4,341,647	4,815,613	387,777	108,613	67.6	7,015,532	3,566,265	2,535	794	23.9	...
Reading	1924	1,142	658,358	730,054	73,253	16,078	63.3	1,079,157	561,273	392	81	17.2	81
	1923	1,142	721,937	822,296	95,026	17,175	66.3	1,143,386	620,462	335	81	19.4	3
Poconos Region:													
Chesapeake & Ohio.....	1924	2,553	1,010,571	1,100,419	29,040	28,953	57.3	2,218,414	1,207,574	423	106	20.0	2
	1923	2,553	759,314	838,442	20,360	21,944	60.5	1,640,289	904,722	407	101	19.9	4
Norfolk & Western.....	1924	2,231	902,460	1,110,572	43,671	25,518	60.1	2,045,222	1,108,269	562	117	17.2	66
	1923	2,228	757,610	977,092	39,108	18,940	62.4	1,439,050	783,585	522	175	25.1	41
Southern Region:													
Atlantic Coast Line.....	1924	4,867	848,532	853,367	12,770	20,721	64.7	1,072,568	420,553	364	67	15.5	24
	1923	4,860	798,296	804,957	15,000	18,605	64.5	982,502	395,068	319	76	19.2	...
Central of Georgia.....	1924	1,907	298,739	300,625	4,909	6,529	75.5	335,442	155,814	140	18	11.6	5
	1923	1,907	275,846	278,952	5,220	5,824	74.5	305,699	145,099	113	19	14.2	...
I. C. (inc. Y. & M. V.)....	1924	6,196	1,883,689	1,899,013	41,504	50,123	64.8	3,123,373	1,425,333	803	120	13.0	8
	1923	6,190	1,989,363	2,022,977	43,610	50,148	66.1	3,095,853	1,464,009	765	103	11.9	2
Louisville & Nashville.....	1924	5,026	1,764,532	1,890,063	70,603	32,408	63.6	2,115,186	1,044,166	618	101	14.0	1
	1923	5,022	1,462,725	1,565,768	52,918	26,025	67.6	1,591,656	790,898	596	114	16.1	...
Seaboard Air Line.....	1924	3,548	557,732	567,764	7,658	12,775	69.7	676,069	269,977	219	42	15.9	...
	1923	3,550	532,524	542,767	5,980	11,269	66.4	613,078	244,373	197	67	25.2	...
Southern Ry.	1924	6,820	1,460,563	1,499,530	33,692	33,546	70.9	1,785,450	760,102	857	111	11.5	4
	1923	6,942	1,478,842	1,529,209	39,340	32,082	70.2	1,692,620	747,367	865	183	17.5	2
Northwestern Region:													
Chic. & North Western.....	1924	8,463	1,667,921	1,725,867	17,294	35,090	63.4	2,045,750	874,556	873	215	19.7	24
	1923	8,442	1,698,324	1,765,351	28,922	33,717	66.7	1,940,953	895,673	831	249	23.1	...
Chic., Milw. & St. P.....	1924	10,983	1,762,625	1,823,129	71,791	42,722	65.8	2,459,771	1,131,670	964	158	14.1	107
	1923	11,022	1,757,867	1,816,431	74,861	40,269	65.7	2,331,088	1,102,750	860	199	18.8	19
Chic., St. P., Minn. & Om.	1924	1,726	351,864	378,314	18,128	6,718	67.1	377,118	165,062	161	41	20.4	2
	1923	1,726	355,042	381,385	17,049	5,684	64.7	324,810	140,149	154	52	25.1	...
Great Northern	1924	8,252	749,596	782,978	45,046	22,716	69.8	1,285,994	592,791	624	168	21.2	137
	1923	8,255	907,391	941,849	45,640	20,637	66.0	1,220,776	578,385	531	223	29.6	8
Minn., St. P. & S. Ste. M.	1924	4,374	524,528	537,636	8,054	11,864	72.7	611,836	288,269	291	52	15.3	13
	1923	4,352	504,882	513,057	9,904	10,772	76.9	540,407	267,777	277	68	19.6	4
Northern Pacific	1924	6,415	783,844	819,485	44,227	23,700	74.8	1,303,763	627,311	555	161	22.5	82
	1923	6,415	879,449	924,403	54,224	23,257	74.7	1,288,444	638,073	548	172	23.8	18
Oreg.-Wash. R. R. & Nav.	1924	2,180	200,114	210,780	19,452	5,081	72.8	287,595	133,905	149	23	13.3	17
	1923	2,185	197,003	222,016	32,178	4,659	71.8	257,368	119,381	125	50	28.6	1
Central Western Region:													
Atch., Top. & S. Fe.....	1924	9,846	1,383,130	1,452,737	72,601	39,926	68.0	2,206,470	856,942	790	167	1	

o. 21
1924,
SERVICE
daily

Region, road and year	Average number of freight cars on line daily					Gross tons per train, excluding locomotive and tender	Net tons per train	Net tons per loaded car	Net ton- miles per car-day	Car- miles per car-day	Net ton- miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles including locomotive and tender	Passenger service		
	Home	Foreign	Total	Per cent un- service- able	Stored								Train- miles	Passenger- train car-miles	
New England Region:															
Boston & Albany.....	1924	1,886	5,975	7,861	3.4	....	933	373	20.1	452	31.8	9,021	217	285,716	1,839,100
	1923	1,354	8,553	9,907	2.6	....	855	369	20.1	392	24.2	9,849	254	278,192	1,731,523
Boston & Maine.....	1924	13,960	17,555	31,555	11.6	....	1,092	463	20.9	265	17.1	3,408	184	784,786	4,067,193
	1923	12,405	29,064	41,469	9.5	....	926	408	22.4	186	11.1	3,150	242	740,021	3,949,674
N. Y., New H. & Hartf..	1924	18,906	17,731	36,637	20.1	....	1,214	520	21.0	232	15.1	4,299	170	957,471	6,020,454
	1923	16,070	36,443	52,513	14.3	....	1,114	516	23.7	136	7.7	3,619	261	906,370	5,607,865
Great Lakes Region:															
Delaware & Hudson.....	1924	9,967	7,451	17,418	5.3	....	1,664	859	32.3	640	29.0	12,553	223	183,594	902,055
	1923	7,932	12,079	20,011	6.2	....	1,464	759	33.9	419	18.6	9,466	275	175,028	883,204
Del., Lack. & Western....	1924	13,896	10,222	24,118	4.4	....	1,681	771	25.0	582	33.1	14,131	207	460,788	3,313,227
	1923	12,090	13,730	25,820	3.9	30	1,547	754	28.4	443	22.7	11,525	273	438,390	3,036,460
Erie (inc. Chi. & Erie)...	1924	30,196	21,858	52,054	7.0	3,445	2,017	958	28.4	651	33.4	14,573	152	631,001	4,786,911
	1923	22,453	38,899	61,352	8.5	....	1,880	944	29.4	598	28.0	15,898	176	532,427	3,698,155
Lehigh Valley	1924	21,888	11,252	33,140	8.0	225	1,608	761	27.5	484	25.9	11,819	183	324,518	2,486,492
	1923	19,428	18,489	37,917	5.5	213	1,487	770	33.0	291	13.1	8,386	258	312,116	2,350,268
Michigan Central	1924	10,600	20,509	31,109	5.6	115	1,675	659	20.7	459	33.2	7,822	147	565,670	4,787,032
	1923	8,215	24,002	32,217	7.6	....	1,569	669	22.2	433	27.7	7,631	159	528,548	4,527,652
New York Central.....	1924	55,597	84,846	140,443	4.7	1,803	2,016	901	27.2	514	29.9	11,198	143	2,450,201	19,077,812
	1923	58,143	101,579	159,722	9.3	....	1,862	873	28.7	467	25.4	11,537	163	2,339,654	17,318,891
New York, Chi. & St. L..	1924	8,402	13,924	22,326	5.2	....	1,502	643	23.0	734	45.8	9,819	151	201,595	980,084
	1923	3,780	17,526	21,306	7.5	....	1,371	618	24.9	703	40.1	8,975	175	195,262	923,917
Pere Marquette	1924	8,039	15,914	23,944	3.3	....	1,360	647	26.0	393	21.9	4,288	161	245,459	1,213,526
	1923	5,236	18,761	23,997	4.4	....	1,316	647	26.9	326	16.5	3,586	177	227,204	1,052,720
Pitts. & Lake Erie.....	1924	10,365	10,841	21,213	4.3	247	2,504	1,418	42.3	355	14.0	32,558	83	111,502	568,653
	1923	7,946	11,379	19,325	22.4	....	2,319	1,339	43.3	405	15.0	33,881	92	104,559	530,761
Wabash	1924	10,788	14,991	25,779	2.6	....	1,509	646	23.3	628	38.0	6,578	172	472,502	2,632,873
	1923	7,243	16,716	23,959	3.2	....	1,487	661	22.6	519	30.0	5,145	187	394,987	2,188,740
Central Eastern Region:															
Baltimore & Ohio.....	1924	62,846	39,953	102,799	7.6	3,435	1,665	825	30.6	555	27.7	10,975	200	1,472,030	9,216,445
	1923	47,558	57,794	105,352	9.2	....	1,561	786	29.9	547	26.7	11,058	222	1,320,910	8,180,379
Central of New Jersey....	1924	16,761	11,378	28,139	5.5	1,763	1,520	743	31.1	249	12.7	10,110	206	323,907	1,623,419
	1923	11,835	16,565	28,400	7.2	....	1,287	646	33.0	228	11.1	9,336	243	309,113	1,388,273
Chicago & Eastern Ill....	1924	12,320	5,271	17,591	15.1	2,188	1,586	793	31.8	434	22.1	8,080	177	235,322	1,450,822
	1923	9,363	7,474	16,837	18.7	....	1,491	770	32.2	423	20.3	7,544	216	200,539	1,267,381
Cleve., Cin., Chic. & St. L.	1924	13,401	23,595	36,996	5.2	623	1,913	948	32.1	686	34.0	10,685	144	681,035	4,133,051
	1923	9,158	26,268	35,426	6.7	....	1,863	891	30.7	617	30.4	9,192	165	653,134	3,917,915
Elgin, Joliet & Eastern ¹ ..	1924	10,068	8,661	18,729	5.6	460	2,302	1,237	41.4	312	11.5	12,700	148	.....	.....
	1923	8,377	6,874	15,251	9.1	....	2,162	1,202	42.3	386	13.6	12,808	159	.....	.....
Long Island	1924	1,667	5,407	7,074	0.9	....	798	313	23.5	67	4.7	1,196	359	189,319	1,069,338
	1923	1,506	5,638	7,144	3.3	....	708	273	23.6	59	4.4	1,075	485	171,628	956,601
Pennsylvania System	1924	193,397	113,021	306,478	7.4	26,568	1,740	861	32.4	447	20.9	12,514	165	4,785,422	31,900,876
	1923	151,259	135,566	286,825	6.6	1,643	1,616	821	32.8	444	20.0	11,702	183	4,596,631	30,760,441
Reading	1924	18,984	16,856	35,840	2.9	....	1,639	853	34.9	540	24.4	16,942	196	480,428	2,258,630
	1923	14,273	22,199	36,472	3.3	....	1,584	859	36.1	208	25.4	19,397	216	455,193	2,600,754
Pocahontas Region:															
Chesapeake & Ohio.....	1924	25,139	13,218	38,357	5.6	1,057	2,195	1,195	41.7	1,086	45.4	16,311	137	437,458	2,463,016
	1923	29,665	17,800	47,465	10.7	....	2,160	1,192	41.2	681	27.3	12,657	152	409,559	2,298,822
Norfolk & Western.....	1924	23,280	11,341	34,621	4.4	....	2,266	1,228	43.4	1,104	42.3	17,131	192	385,315	2,440,422
	1923	24,270	11,506	35,776	5.3	....	1,899	1,034	41.4	782	30.3	12,562	224	359,326	2,158,478
Southern Region:															
Atlantic Coast Line.....	1924	20,771	16,275	37,046	3.5	....	1,264	496	20.3	391	29.8	2,980	137	878,951	6,598,784
	1923	15,003	19,886	34,889	9.3	....	1,230	495	21.2	404	29.5	2,903	147	792,144	5,963,232
Central of Georgia.....	1924	3,763	5,169	8,932	6.1	....	1,123	522	23.9	602	33.4	2,818	176	340,447	2,006,126
	1923	2,095	6,541	8,636	6.5	....	1,108	526	24.9	600	32.3	2,718	195	319,776	1,768,803
I. C. (inc. Y. & M. V.)....	1924	39,387	26,564	65,951	4.3	....	1,658	757	28.4	745	40.5	7,932	163	1,515,306	9,125,111
	1923	24,533	40,925	65,458	6.5	....	1,556	736	29.9	709	41.4	8,447	179	1,393,799	8,337,355
Louisville & Nashville....	1924	37,081	20,399	57,480	5.6	80	1,199	592	32.2	626	30.6	7,164	186	979,999	5,826,451
	1923	24,581	27,637	52,218	11.1	42	1,088	541	30.4	541	26.3	5,625	218	934,698	5,499,065
Seaboard Air Line.....	1924	9,352	10,613	19,965	5.2	....	1,212	484	21.1	466	31.7	2,624	166	643,428	4,305,844
	1923	10,516	15,410	25,926	19.5	....	1,151	459	21.7	337	23.4	2,458	187	604,822	3,838,726
Southern Ry.	1924	34,945	25,040	59,985	4.4	....	1,222	520	22.7	437	27.2	3,843	197	1,254,005	7,729,644
	1923	27,168	33,586	60,754	8.7	....	1,145	505	23.3	439	26.9	3,845	222	1,211,894	7,078,242
Northwestern Region:															
Chic. & North Western....	1924	43,866	35,209	79,075	7.1	3,500	1,227	524	24.9	381	24.1	3,563	185	1,465,726	9,066,718
	1923	32,075	43,965	76,040	7.1	4,246	1,143	527	26.6	421	23.7	3,789	208	1,400,008	8,169,491
Chic., Milw. & St. P.....	1924	49,593	30,255	79,848	6.2	3,000	1,396	642	26.5	489	28.0	3,553	181	1,389,601	8,003,884
	1923	35,960	42,117	78,077	7.6	....	1,326	627	27.4	504	28.0	3,573	200	1,309,740	7,727,467
Chic., St. P., Minn. & Om..	1924	3,192	11,005	14,197	8.5	550	1,072	469	24.9	401	24.0	3,297	177	288,663	1,628,890
	1923	2,063	10,565	12,628	9.2	....	915	395	24.7	396	24.8	2,900	227	266,388	1,557,105
Great Northern	1924	44,246	7,850	52,096	5.7	....	1,716	791	26.1	392	21.5	2,977	162	919,382	5,296,705
	1923	37,712	14,418	52,130	7.3	....	1,345	637	28.0	396	21.4	2,502	222	849,011	4,895,486
Minn., St. P. & S. Ste. M..	1924	17,879	8,502	26,381	6.5	310	1,166	550	24.3	377	21.3	2,273	145	402,043	2,134,357
	1923	13,945	9,333	23,278	7.4	70	1,070	530	24.9	411	21.5	2,197	161	356,481	1,931,712
Northern Pacific	1924	32,591	9,930	42,521	6.5	....	1,663	800	26.5	509	25.7	3,372	131	751,499	4,625,571
	1923	26,442	10,090	36,532	11.0	....	1,465	726	27.4	624	30.4	3,552	164	726,052	4,522,540
Oreg.-Wash. R. R. & Nav..	1924	6,538	2,973	9,511	5.3	....	1,437	669	26.4	485	25.3	2,118	198	231,010	1,472,009
	1923	5,531	4,955	10,486	3.2	....	1,306	606	25.6	407	22.1	1,951	249	233,010	1,478,357
Central Western Region:															
Atch., Top. & S. Fe.....	1924	49,322	15,468	64,790	6.3	10,194	1,595	620	21.5	456	31.3	3,001	149	1,712,069	12,872,988
	1923	38,258	20,364	58,622	7.3	3,801	1,418	570	21.7	524	34.5	3,112	170	1,627,560	12,271,943
Chicago & Alton.....	1924	8,785	6,050	14,835	3.0	500	1,375	566	25.7	423	27.1	6,207	192	272,706	1,593,507
	1923	5,889	8,422	14,311	7.7	....	1,278	580	27.7	490	27.6	6,944	235	262,783	1,521,637
Chic., Burl															

U. S. Chamber of Commerce

to Discuss Transportation

At the annual meeting of the Chamber of Commerce of the United States to be held in Cleveland, Ohio, on May 6-9, transportation subjects will be discussed at two luncheon meetings, to be presided over by Carl R. Gray, president of the Union Pacific. At the May 6 meeting the following discussions are scheduled:

Recent Developments in Postal Service, by Col. Paul Henderson, Second Assistant Postmaster General.
Report of Chamber's Postal Service Committee, by Lucius Teter, President of the Chicago Trust Company. Discussion led by H. H. Emmons, President of the Detroit Board of Commerce.
The Merchant Marine Problem, by Admiral L. C. Palmer, President of the Emergency Fleet Corporation.
Inland Rail Rates in Relation to Ocean Transportation.

At the luncheon session on May 7 the following subjects will be discussed:

Co-operation of Shippers and Carriers—an Outline of the Work of the Regional Advisory Boards, by H. G. Taylor, President of the National Association of Railway and Utility Commissioners.
Recent Developments in Highway Transport, by George H. Graham, President of the Chandler Motor Car Company.
Results of Referendum No. 43—the Report of the Chamber's Special Committee on Transportation.

An Agent Who Was on the Job

F. T. Stroud, the Missouri Pacific agent at Lavaca, Ark., was not pleased when the traveling auditor showed him that the station's receipts for the first six days of March were \$14.20 while it cost the railroad \$30 to keep the office open. The merchants and other shippers in Lavaca had been shipping their freight over a truck line instead of over the railway. This situation seemed to Mr. Stroud to call for direct action so he wrote a letter to the business men, portions of which follow:

"Does the truck line enhance the value of your property? The railroad does. Does the truck line pay you a heavy school tax? The railroad does—more than anyone else in this community. Do truck lines build up communities and make them a more desirable place to live in? The railroad does. If the truck line was put out of business would it cause a decline in the value of your land and your property in general? What would it do to the value of your property if the railroad should cease to operate through your little city?"

"We need your patronage; we need your assistance to make this a better railroad; and when we get it, our revenues will increase so that we can better our service to you. We are earnestly begging you to help us so that we may be in a better position financially to help you. I am ashamed of the showing we are making here and you can help us to make a better showing. Now won't you do it?"

Aluminum Cars and Locomotives

Suggested by Gen. Atterbury

The possibility of the development of an aluminum alloy at a cost that would enable its use in locomotive and car construction, with a large reduction in weight and consequent decrease in the cost of transporting freight, was suggested by Gen. W. W. Atterbury, vice-president of the Pennsylvania Railroad, in testifying before the Senate committee on agriculture on April 19 in connection with the bid made to the government by himself, J. G. White and Elon M. Hooker for the Muscle Shoals property, which Henry Ford is also seeking. The cheap electric power available at Muscle Shoals, Mr. Atterbury said, would give an opportunity for experimentation to reduce the cost of the metal to a practicable figure.

Referring to the fact that during the war German Zeppelins were made from an alloy of aluminum and magnesium, Mr. Atterbury said that if the bid is accepted he plans to devote considerable time to research work in an effort to manufacture railroad cars out of this aluminum composition. The metal would not have the strength of high carbon steels, but it could be used as a substitute for steel in a large part of either car or locomotive construction. He said it might be possible to cut down the weight by 50 per cent; and although the question whether it is possible to produce the aluminum composition at a cost which would make its use for cars feasible would have to be demonstrated, the efficient production of aluminum at low cost is directly dependent upon cheap electricity. General Atterbury said that the metal he has in mind would have approximately 25 to 35 per cent of the weight of steel.

Conference of Railway Editors at St. Louis

The Conference of Railway Editors, heretofore known as the American Railway Editors' Association, held its second annual conference at Hotel Chase, St. Louis, Mo., on April 18 and 19, with an attendance of about 125, representing 75 railway publications. The principal addresses were made by Robert S. Binkerd, executive secretary of the Railway Executives' Association; Thomas Leasen, president of the Leasen Advertising Agency, New York City; and L. W. Baldwin, president of the Missouri Pacific. Mr. Binkerd spoke on the relations of the railroads to the public; Mr. Leasen on co-operative advertising; and Mr. Baldwin on the relations of the railroads to the railroad magazines. It was voted to admit to membership railroad editors of daily newspapers and other publications.

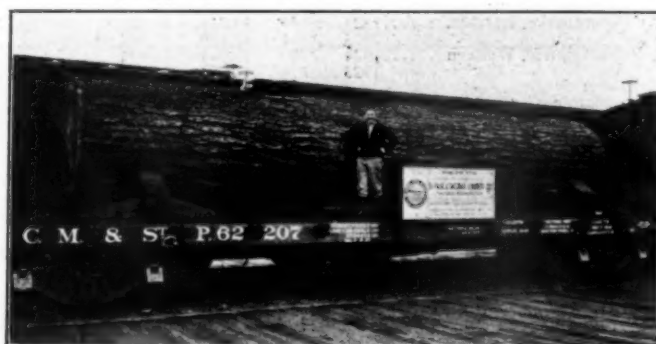
The following officers were elected for the ensuing year: president, R. M. Van Sant, (B. & O.) Baltimore, Md.; vice-president, J. B. Pulcifer, (Penn.) Chicago; secretary, George Flatow, Long Island Railroad, Pennsylvania Station, New York City.

The next annual meeting will be held in Baltimore, but there will probably be a meeting, either at Cleveland or at Cincinnati, in November.

A One-Piece Advertisement

"Say it with Fir" seems to have been the dominant idea, for 1924, of the advertising department of the Tacoma (Wash.) Lumbermen's Club; and it took shape in the preparation of a log 6 ft. in diameter and 32 ft. long, to be used as a traveling exhibit of the fine quality of the Douglas fir lumber manufactured in Washington. The Chicago, Milwaukee & St. Paul Railway is co-operating in the enterprise to the extent of transporting the log free to the principal cities on its 10,000 miles of line.

Tacoma calls itself "the lumber capital of America" and the Lumbermen's Club calls attention to the great variety of wood



A Traveling Advertisement of the Tacoma Lumbermen's Club

products made in that region from fir trees. The log shown in the illustration was the third from the ground, two other full sized logs having been cut below it. It measures 69 in. in diameter inside the bark at the smaller end. The scale shows it to contain 7,216 ft., board measure. The tree from which it was cut, near Tacoma, was about 560 years old.

International Management Congress at Prague

An international conference on management, conceived and planned by the government of Czecho-Slovakia and the Masaryk Academy of Prague, will be held in Prague on July 21-24 this year. The following American technical societies are co-operating in the movement and will be represented at the conference:

American Engineering Council; American Society of Civil Engineers; American Institute of Mining and Metallurgical Engineers; American Society of Mechanical Engineers; American Institute of Electrical Engineers; American Management Association; Management Division of the American Society of Mechanical Engineers; National Association of Cost Accountants; Society of Industrial Engineers; Taylor Society.

The following topics will be discussed:

Scientific Management; the Human Element in Scientific Management; Industrial Relations in Scientific Management; General

Budget Control of Operations; Production Management; Sales Management; Management in the Coal Industry; Management of Transportation (Railways Particularly); City and State Management; Management in the Federal Government; Vocational Education; Education for Commerce and Business Administration; Education for the Profession of Engineering.

The conference will be open and every American who desires to attend will be welcome. A considerable representation from this continent is expected in view of the advertising convention in London, the British Empire Exhibition at Wembley, the Power Congress at London, the International Chamber of Commerce meeting at Paris and other meetings in Europe this summer, all of which will draw many North American visitors.

Railroad Matters Before Parliament

Railway questions are likely to hold the center of the Canadian parliamentary stage for some time. While most of the 26 resolutions for as many Canadian National branch lines have passed the House of Commons which now awaits their presentation in bill form the way is not by any means cleared. There will be strong opposition from the Conservatives to the bills themselves and these latter will also be strongly opposed in the Senate. Opposition to the government's railway program is not likely to be softened any by the annual statement which the Minister of Railways and Canals, George G. Graham, expects to submit to Parliament before the end of the present month. The details of the financing of the various parts of the national system, the extent to which co-ordination of staffs and service has been effected and the troublous problem of meeting or dealing with the fixed charges of the Canadian Northern and the Grand Trunk Pacific, now a part of the C. N. R., will be subjected to close scrutiny by the Conservatives and by some of the Liberal and Progressive members as well. Disclosure of the actual financial position of the system at the close of the fiscal year ended March 31 last will be eagerly awaited by the bond and debenture holders of the two parts of the system above cited. Most of these investors or security holders are resident in England and they will require some substantial proof that the road is not able to pay a dividend to them this year.

Another feature of the railway problem before Parliament is the arrival early this week of Premier John Oliver of British Columbia whose investigation into the affairs of the Pacific Great Eastern caused somewhat of a stir in British Columbia political circles this winter. Premier Oliver is seeking a way of transforming the property into a road that might contribute something towards the cost of its maintenance. His new plan, it is understood, is to press the federal government for some assistance in working out a scheme whereby that road can be extended to link up with the extension into the Grande Prairie agricultural lands northwest of Edmonton. The people of this latter region have been in Ottawa for some time pressing for the start by the Canadian National of a branch into that part of the Peace river country and urging that if the government will now announce that next year that road will be begun, the steady exodus of settlers from that fertile country (but which is still valueless because of lack of transportation facilities) will be checked. Premier Oliver, too, is likely to ask the government about the possibility of still further reducing the westbound freight rates through the Rocky Mountains and further cutting down the differential against his province.

Daily Paper Investigates the

Automatic Train Control Situation

The Christian Science Monitor, Boston, in its issues of April 17, April 19 and April 22 prints a series of articles by Franklin Snow, of New York City, on the automatic train control order of the Interstate Commerce Commission and the attitude of the railroads on the general subject and in relation to the order of the commission. Following a review of the doings of the government in this matter from 1907 to date, Mr. Snow discusses in some detail the objections which have been raised by the railroads and particularly the need of large expenditures to promote safety at highway crossings, following the argument of A. H. Rudd, chief signal engineer of the Pennsylvania, in his recent address before the New York Railroad Club. Mr. Snow says that

lobbyists favoring and lobbyists opposing the order of the Interstate Commerce Commission are now at work in Washington, and he quotes the belief of some observers that "something has been put over" on the railroads and also on the Interstate Commerce Commission itself. "One inventor is said to have spent \$50,000 to have his device adopted by a leading railroad."

The objections to the carrying out of the commission's orders which have been formulated by the railroads for presentation before the commission on May 7 are succinctly set forth. Robert S. Binkerd, vice-chairman of the committee on public relations of the Eastern railroads, is quoted as saying that the railroads would be glad to install automatic train control provided the government would permit the operation of the apparatus with a permissive feature under which the engineman, if alert, could prevent action by the automatic stop. On a very busy division or on a line where heavy trains are moved over steep ascending grades, the imposition of a rule requiring an absolute stop would be likely to occasion serious blockades.

Mr. Snow interviewed locomotive enginemen on the Pennsylvania and on the New York Central. Fred Woods, running on the electrified zone of the Pennsylvania at New York City, reminded the reporter that there is no basis for the view that automatic stops will cause enginemen to relax their vigilance. "We have had automatic train control on the Pennsylvania for a number of years but the enginemen watched the signals just as carefully as ever for the engineman who runs past a stop signal knows that he will draw a 30 days' suspension." Charles J. Chase of the New York Central called attention to the complications arising where a freight train of 100 cars has a locomotive at the rear as well as at the front and where there may be two block signals between the two ends of the train. The pushing engine will have a stop signal constantly against it.

Exhibitors at Atlantic City Conventions

The following list gives the names of firms which have been allotted space by the Railway Supply Manufacturers' Association for the exhibit which will be held in Atlantic City simultaneously with the conventions of Division V, Mechanical, of the American Railway Association, and Division VI, Purchases and Stores, June 11-18:

Adams & Westlake Co., Chicago.
Air Reduction Sales Co., New York City.
Ajax Manufacturing Co., Cleveland.
Allegheny Steel Co., Brackenridge, Pa.
Aluminate Sales Corporation, Chicago.
American Abrasive Metals Co., New York.
American Arch Co., Inc., New York.
American Bolt Corporation, Boss Nut Division, Chicago.
American Brake Shoe & Foundry Co., Mahwah, N. J.
American Car & Foundry Co., New York.
American Crusher & Machinery Corporation, New York.
American Locomotive Co., New York.
American Malleable Castings Association, Cleveland.
American Railway Appliances Co., Inc., New York.
American Radiator Co., Buffalo, N. Y.
American Steel Foundries, Chicago.
American Tool Works Co., Cincinnati.
Anchor Packing Co., Philadelphia.
Armstrong-Blum Mfg. Co., Chicago.
Ashton Valve Co., Boston.
Association of Manufacturers of Chilled Car Wheels, Chicago.
Atkins, E. C., & Co., Inc., Indianapolis.
Automatic Transportation Co., Inc., Buffalo, N. Y.

Badeker Manufacturing Co., Chicago.
Baker, R. & L., Co., Cleveland.
Baldwin Locomotive Works, Philadelphia.
Barco Manufacturing Co., Chicago.
Bath, John, & Co., Inc., Worcester, Mass.
Besly, Charles H., & Co., Chicago.
Bethlehem Steel Co., Bethlehem, Pa.
Bettendorf Company, Inc., Bettendorf, Iowa.
Bignall & Keeler Co., Edwardsville, Ill.
Bird-Archer Co., New York.
Black & Decker Mfg. Co., Baltimore, Md.
Blackmer Rotary Pump Co., Petoskey, Mich.
Bowser, S. F., & Co., Inc., Fort Wayne, Ind.
Boye & Emmes Machine Tool Co., Cincinnati.
Bradford Corporation, New York.
Bradley Washfountain Co., Milwaukee.
Brewster, Morris B., Inc., Chicago.
Bridgeport Safety Emery Wheel Co., Bridgeport, Conn.
Brill, J. G., Co., Philadelphia.
Brown-Lipe Gear Co., Syracuse, N. Y.
Brubaker, W. L., & Bros., Co., New York.
Buckeye Steel Castings Co., Columbus, Ohio.
Buffalo Forge Co., Buffalo, N. Y.
Buffalo Brake Beam Co., New York.
Bullard Machine Tool Co., Bridgeport, Conn.
Burden Iron Co., Troy, N. Y.
Burry Railway Supply Co., Chicago.

Camden Forge Company, Camden, N. J.
Camel Company, Chicago.
Cantilever Wrench Co., Inc., Paterson, N. J.

Carbie Manufacturing Co., Duluth, Minn.
Carbo-Oxygen Company, Pittsburgh.
Carnegie Steel Co., Pittsburgh.
Celluloid Zapon Co., New York.
Central Electric Co., Chicago.
Chambersburg Engineering Co., Chambersburg, Pa.
Chaton Fibre Co., Chicago.
Chicago-Cleveland Car Roofing Co., Chicago.
Chicago Pneumatic Tool Co., New York.
Chicago Railway Equipment Co., Chicago.
Chisholm-Moore Mfg. Co., Cleveland.
Clark Car Company, Pittsburgh.
Clark Tractor Co., Buchanan, Mich.
Cleveland Pneumatic Tool Co., Cleveland.
Cleveland Twist Drill Co., Cleveland.
Columbia Machine Tool Co., Hamilton, Ohio.
Commonwealth Steel Co., St. Louis, Mo.
Cone Automatic Machine Co., Windsor, Vt.
Consolidated Machine Tool Corporation of America, Wilmington, Del.
Covington Machine Co., Covington, Va.
Crane Co., Chicago.
Crosby Steam Gage & Valve Co., Boston.
Curtain Supply Co., Chicago.

Dalman, J. N., Chicago.
Davis Boring Tool Co., Inc., St. Louis.
Davis Brake Beam Co., Pittsburgh.
Dayton Pneumatic Tool Co., Dayton, Ohio.
Dearborn Chemical Co., Chicago.
Detroit Lubricator Co., Detroit.
Devoc & Reynolds Co., Inc., New York.
Diamond Machine Co., Providence, R. I.
Diamond Power Specialty Corporation, Detroit.
Dickinson, Paul, Inc., Chicago.
Dielmore Sales Co., Inc., Philadelphia.
Diston, Henry & Sons, Inc., Tacony, Philadelphia.
Distance-Speed Recording Co., New York.
Dixon, Joseph, Crucible Co., Jersey City, N. J.
Dressel Railway Lamp & Signal Co., Arlington, N. J.
Dresses Machine Tool Co., Cincinnati.
Duff Manufacturing Co., Pittsburgh.

Eagle Manufacturing Co., Wellsburg, W. Va.
Ebinger, D. A., Sanitary Mfg. Co., Columbus, Ohio.
Eclipse Interchangeable Counterbore Co., Detroit.
Edgewater Steel Co., Pittsburgh.
Edison Storage Battery Co., West Orange, N. J.
Edna Brass Mfg. Co., Cincinnati.
Edson Manufacturing Corp., Boston.
Edwards, O. M., Co., Inc., Syracuse, N. Y.
Electric Arc Cutting & Welding Co., Newark, N. J.
Electric Controller & Mfg. Co., Cleveland.
Electric Service Supplies Co., Philadelphia.
Electric Storage Battery Co., Philadelphia.
Elvin Mechanical Stoker Co., New York.
Elwell-Parker Electric Co., New York.
Emery, E., Pittsburgh.
Enterprise Railway Equipment Co., Chicago.
Equipment Specialties Co., Chicago.
Everlasting Valve Co., Jersey City, N. J.
Ewald Iron Company, Louisville, Ky.

Flannery Bolt Company, Pittsburgh.
Ford, J. B., Company, Wyandotte, Mich.
Fort Pitt Malleable Iron Co., Pittsburgh.
Foster, Walter H., Company, New York.
Foster Machine Co., Elkhart, Ind.
Franklin Railway Supply Co., Inc., New York.
Franch Battery & Carbon Co., Madison, Wis.
Frost Railway Supply Co., Detroit.

Galena Signal Oil Co., Franklin, Pa.
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Garlock Packing Company, Palmyra, N. Y.
General Electric Company, Schenectady, N. Y.
Giessel, Henry, Co., Chicago.
Gilbert, A., & Sons, Brass Foundry Co., St. Louis.
Gill Railway Supply Co., Peoria, Ill.
Globe Steel Tubes Co., Milwaukee.
Goddard & Goddard Co., Inc., Detroit.
Gold Car Heating & Lighting Co., Brooklyn, N. Y.
Goodall Rubber Co., Philadelphia.
Goodrich, B. F., Rubber Co., Akron, Ohio.
Gould Coupler Company, New York.
Gould & Eberhardt, Irvington, N. J.
Gray, G. A., Co., Cincinnati.
Griffin Wheel Company, Chicago.
Grip Nut Company, Chicago.

Hale-Kilburn Company, Philadelphia.
Hall Draft Gear Corporation, Watervliet, N. Y.
Hanna Stoker Company, Cincinnati.
Hauck Manufacturing Co., Brooklyn, N. Y.
Heywood-Wakefield Co., Wakefield, Mass.
Hunt, G. L., Philadelphia.
Hunt-Spiller Mfg. Corp., So. Boston.
Hutchins Car Roofing Co., Detroit.
Hyatt Roller Bearing Co., Newark, N. J.

Illinois Steel Company, Chicago.
Independent Pneumatic Tool Co., Chicago.
Ingersoll Milling Machine Co., Rockford, Ill.
Individual Drinking Cup Co., Inc., Eaton, Pa.
Ingersoll Rand Company, New York.
International Correspondence Schools, Scranton, Pa.
International Signal Co., New York.
Irving Iron Works Co., Long Island City, N. Y.
Irwin Auger Bit Co., Wilmington, Ohio.

Jacques, H. W., Co., Philadelphia.
Jefferson Union Co., Lexington, Mass.
Jenkins Bros., New York.
Johns-Manville, Inc., New York.
Jones & Lamson Machine Co., Springfield, Vt.

Jones & Laughlin Steel Corporation, Pittsburgh.
Joyce-Cridland Company, Dayton, Ohio.

Keller, William H., Inc., Grand Haven, Mich.
Keller Mechanical Engineering Corporation, Brooklyn, N. Y.
Kerite Insulated Wire & Cable Co., New York.
Keyoke Railway Equipment Co., Chicago.
King Pneumatic Tool Co., Chicago.

Landis Machine Company, Waynesboro, Pa.
Lapointe Machine Tool Co., Hudson, Mass.
Larco Wrench & Mfg. Corp., Chicago.
Latrobe Tool Company, Latrobe, Pa.
Lebanon Steel Foundry, Lebanon, Pa.
Lehmann Machine Co., St. Louis.
Lehon Company, Chicago.
Liberty Manufacturing Co., Pittsburgh.
Libbey Glass Mfg. Co., Toledo, Ohio.
Link-Belt Co., Chicago.
Locomotive Firebox Company, Chicago.
Locomotive Stoker Company, Pittsburgh.
Logan Drinking Cup Co. Division, U. S. Envelope Co., Worcester, Mass.
Long, Charles R., Jr., Company, Louisville, Ky.
Levell, F. H., & Company, Arlington, N. J.
Lucas Machine Tool Co., Cleveland.
Lukens Steel Co., Coatesville, Pa.
Lunkenheimer Co., Cincinnati.

MacRae's Blue Book Co., Chicago.
Madison-Kipp Corporation, Madison, Wis.
Manning, Maxwell & Moore, Inc., New York.
Massachusetts Mohair Plush Co., Boston.
Metal & Thermit Corporation, New York.
Metal Hose & Tubing Co., Inc., Brooklyn, N. Y.
Midgley & Borrowdale, Chicago.
Midland Company, South Milwaukee, Wis.
Milar, Clinch & Co., Chicago.
Milburn, Alexander, Co., Baltimore.
Miner, W. H., Inc., Chicago.
More-Jones Brass & Metal Co., St. Louis.
Morton Manufacturing Co., Chicago.
Morton Manufacturing Co., Muskegon Heights, Mich.
Murdock Mfg. & Supply Co., Cincinnati.
McCabe Manufacturing Co., Lawrence, Mass.
McConway & Torley Co., Pittsburgh.

Nathan Manufacturing Co., New York.
National Boiler Washing Co. of Illinois, Chicago.
National Brake Company, Inc., Buffalo.
National Car Wheel Co., Pittsburgh.
National Lead Company, New York.
National Lock Washer Co., Newark, N. J.
National Machinery Co., Tiffin, Ohio.
National Malleable & Steel Castings Co., Cleveland.
National Railway Appliance Co., New York.
National Railway Devices Co., Chicago.
National Safety Appliance Co., Chicago.
National Tube Co., Pittsburgh.
Nazel Engineering & Machine Works, Philadelphia.
Nelson, B. F., Mfg. Co., Chicago.
New York Air Brake Co., New York.
Niles-Bement-Pond Co., New York.
Norton, A. O., Inc., Boston.
Nuttall, R. D., Pittsburgh.

Ohio Machine Tool Co., Kenton, Ohio.
O. K. Tool Co., Shelton, Conn.
Okadee Company, Inc., Chicago.
Okonite Company, Passaic, N. J.
Oldham, George, & Son Company, Baltimore.
Oliver Electric & Manufacturing Co., St. Louis.
O'Malley Beare Valve Co., Chicago.
Oxweld Railroad Service Co., Chicago.

Page Steel & Wire Co., Bridgeport, Conn.
Paige & Jones Chemical Co., Inc., New York.
Paint Products Corporation, Philadelphia.
Pantasote Co., Inc., New York.
Parkesburg Iron Co., Parkesburg, Pa.
Paxton-Mitchell Co., Omaha.
Peerless Machine Co., Racine, Wis.
Pels, Henry, & Co., Inc., New York.
Penn Iron & Steel Co., Creighton, Pa.
Pilliod Company, New York.
Pilot Packing Co., Inc., Chicago.
Pittsburgh Steel Foundry Co., Pittsburgh.
Pittsburgh Testing Laboratory, Pittsburgh.
Pocket List of Railroad Officials, New York.
Potter & Johnston Machine Co., Pawtucket.
Pratt & Lambert, Inc., Buffalo.
Pratt & Whitney Co., New York.
Premier Staybolt Co., Pittsburgh.
Pressed Steel Car Co., Pittsburgh.
Princeton Foundry & Supply Co., Princeton, W. Va.
Production Machine Co., Greenfield, Mass.
Pyle-National Co., Chicago.

Q & C Co., New York.

Racine Tool & Machine Co., Racine, Wis.
Railroad Herald, Atlanta.
Railway Devices Co., St. Louis.
Railway Purchases & Stores, Chicago.
Railway Review, Chicago.
Railway Storage Battery Car Co., New York.
Ralston Steel Car Co., Columbus, Ohio.
Remington Typewriter Co., New York.
Republic Iron & Steel Co., Youngstown, Ohio.
Rice Manufacturing Co., Indianapolis.
Rivet Cutting Gun Co., Cincinnati.
Roberts Automatic Connector Co., Ltd., Sarnia, Ontario.
Robinson, Dwight P., & Co., Inc., New York.
Roebeling's, John A., Sons Co., Trenton, N. J.
Rogatchoff Company, Baltimore, Md.
Rome Iron Mills, Inc., New York.
Rubberset Co., Newark, N. J.

S K F Industries, Inc., New York.
 Safety Car Heating & Lighting Co., New York.
 Safety Equipment Service Co., Cleveland.
 Sargent Company, Chicago.
 Schaefer Equipment Co., Pittsburgh.
 Scullin Steel Co., St. Louis.
 Scully Steel & Iron Co., Chicago.
 Stafford Roller Bearing Car Truck Corporation, Lawton, Mich.
 Seller's, Wm., & Co., Inc., Philadelphia.
 Sheafe Engineering Co., Inc., Chicago.
 Sherwin-Williams Co., Cleveland.
 Simmons-Boardman Publishing Co., New York.
 Sipe, James B., & Company, Inc., Bridgeville, Pa.
 Skinner Chuck Company, New Britain, Conn.
 Skybryte Company, Cleveland.
 Smith Locomotive Adjustable Hub Plate Co., Chicago.
 Snyder, J. E., & Son Co., Worcester, Mass.
 Southern Wheel Company, St. Louis.
 Southwark Foundry & Machine Co., Philadelphia.
 Springfield Machine Tool Co., Springfield, Ohio.
 Standard Car Truck Company, Chicago.
 Standard Coupler Co., New York.
 Standard Railway Equipment Co., Chicago.
 Standard Steel Works Co., Philadelphia.
 Standard Stoker Co., Inc., New York.
 Starrett, L. S., Co., Athol, Mass.
 Stewart Manufacturing Corporation, Chicago.
 Stucki, A., Company, Pittsburgh.
 Sun Oil Company, Philadelphia.
 Sunbeam Electric Manufacturing Co., Evansville, Ind.
 Superheater Co., New York.
 Superior Steel Castings Co., Chicago.
 Swind Machinery Co., Philadelphia.
 Symington, T. H., Co., P. O. Box 993, Rochester, N. Y.

Talmage Manufacturing Co., Cleveland.
 Templeton, Kenly & Co., Ltd., Chicago.
 Thomson Electric Welding Co., Lynn, Mass.
 Timken Roller Bearing Co., Canton, Ohio.
 Transportation Devices Corporation, Indianapolis.
 Tucco Products Corporation, New York.

Underwood, H. B. Corporation, Philadelphia.
 Union Asbestos & Rubber Co., Chicago.
 Union Draft Gear Co., Chicago.
 Union Metal Products Co., Chicago.
 Union Railway Equipment Co., Chicago.
 Union Spring & Manufacturing Co., Pittsburgh.
 United Alloy Steel Corporation, Canton, Ohio.
 United Manufacturing & Sales Corporation, Denver, Colo.
 U. S. Light & Heat Corporation, Niagara Falls, N. Y.
 U. S. Metallic Packing Co., Philadelphia.
 United States Rubber Co., New York.
 Universal Draft Gear Attachment Co., Chicago.
 Universal Machine & Tool Co., Canton, Ohio.
 Universal Packing & Service Co., Chicago.
 Universal Packing Corporation, Pittsburgh.

Vanadium-Alloys Steel Co., Latrobe, Pa.
 Vanadium Corporation of America, New York.
 Vapor Car Heating Co., Inc., Chicago.
 Virginia Equipment Co., Oak Harbor, Ohio.
 Vissering, Harry, & Co., Inc., Chicago.

Walker Draft Gear Corporation, New York.
 Walker, L. S. & E. H., New York.
 Walworth Manufacturing Co., Boston.
 Warner & Swasey Co., Cleveland.
 Waugh Draft Gear Co., Chicago.
 Waynesboro Nut Lock Co., Inc., Waynesboro, Pa.
 West Disinfecting Co., Chicago.
 Western Railway Equipment Co., St. Louis.
 Western Steel Car & Foundry Co., Pittsburgh.
 Westinghouse Airbrake Co., Wilmerding, Pa.
 Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
 Wheel Truing Brake Shoe Co., Detroit.
 White American Locomotive Sander Co., Roanoke, Va.
 Whiting Corporation, Harvey, Ill.
 Willard Storage Battery Co., Cleveland.
 William Tool Corporation, Erie, Pa.
 Wilson-Imperial Company, Newark, N. J.
 Wine Railway Appliance Co., Toledo, Ohio.
 Wood, Alan, Iron & Steel Co., Philadelphia.
 Woods, Edwin S., & Co., Chicago.
 Worthington Pump & Machinery Corp., New York.
 Wright Manufacturing Co., Lisbon, Ohio.
 Wyoming Shovel Works, Wyoming, Pa.

Yale & Towne Mfg. Co., Stamford, Conn.

Zapon Leather Cloth Co., New York.

TRACK EXHIBITORS

American Locomotive Co., New York.
 Clark Car Co., Pittsburgh.
 Dalman, J. W., Chicago.
 Delaware & Hudson Co., Albany, N. Y.
 Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

BRITISH SETTLERS are to be located on lands owned by the Canadian National Railways in groups of 20 families, under an arrangement entered into between the railway and the overseas settlement committee of the Colonial Office in London. The railway undertakes to have advanced an amount not to exceed \$1,500 to enable the settler to purchase stock and equipment and the British Colonial Secretary guarantees payment of the full amount of any loss incurred through such advances, but the total guarantee will not exceed 50 per cent of the total amount advanced to all settlers.

Traffic News

The Louisiana Public Service Commission has ordered all carriers carrying passengers in the state of Louisiana to allow 48 hours free storage of baggage.

The city of Philadelphia has appropriated \$25,000 to aid the Ocean Traffic Bureau in advertising the advantages of Philadelphia as the most suitable port to which shippers can send freight for export.

The New York Central announces that beginning April 27 a new through train, the Ohio State Limited, will be put in operation specially for passengers from New York to Toledo, Cincinnati and other Ohio cities. The train will leave New York at 3 p. m. and will be the equal of the Twentieth Century Limited.

W. H. Chandler, heretofore manager of the transportation bureau of the Boston Chamber of Commerce, has been appointed manager of the traffic bureau of the Merchants' Association, New York City, succeeding J. C. Lincoln, who died last December. Mr. Chandler is one of the best known traffic men in the country, having been president of the National Industrial Traffic League for several terms. He has been in Boston about ten years, previous to which he was assistant manager of the New York bureau, to which he returns.

Leasing of Lighterage Facilities to Be Investigated

The Interstate Commerce Commission, acting under its general order for the investigation of railway equipment, which was begun on January 3, 1921, has announced a hearing to be held at 11 Broadway, New York City, on May 12, on the rightfulness and propriety of the leasing of lighterage facilities by the Erie Railroad to outside parties and the conduct of the lighterage business by such outsiders; the character and extent of the services rendered, the reasonableness of the compensation and whether there has been a failure of the railroad to collect a reasonable rent for the use of its property. This refers apparently to the action of the Erie some two years ago, when there was a strike of employees in New York harbor.

Southern Freight Rate Hearings Postponed

The time for filing exceptions to the proposed report of the Interstate Commerce Commission in the "Southern Class Rate Investigation" has been extended until July 1. Oral argument, which had been assigned for May 21-23, has been postponed. The argument will be had, if possible, early in October, the date to be announced later. In the meantime, the carriers will conduct a traffic test covering the month of April to ascertain, as nearly as may be, the revenue effect of the rates recommended in the proposed report. For this purpose, a definite scheme of rates based on the findings of the proposed report is to be worked out by the carriers. Representatives of the commission's Bureau of Traffic will keep in touch with the work, to the end that the scheme of rates may be such as those representatives would be willing to approve as in substantial accord with the findings. Neither the commission nor the carriers, however, will be committed to these rates, it being understood that they are to be worked out for the purpose of testing the recommendations of the proposed report.

The traffic test will cover all the freight affected by the proposed report, both intraterritorial and interterritorial, and will also cover intrastate traffic upon the assumption that intrastate rates will be adjusted in harmony with interstate. The carriers have prepared an outline of the proposed traffic test and will be expected to furnish copies of such outline to all parties to the case. All such parties will be free to submit suggestions as to the method of making the traffic test and as to the manner in which its results shall be analyzed.

It is the present intention to afford an opportunity to incorporate the results of this traffic test in the record prior to the oral argument, in September if possible, and also an opportunity prior to the argument for the filing of printed comments upon these results.

Commission and Court News

Interstate Commerce Commission

The Interstate Commerce Commission has issued a revision of Rule 77 of Tariff Circular No. 18-a relating to publishing and filing tariffs under the fourth section of the commerce act and also an order relating to the information to be furnished in applications for relief from the provisions of the fourth section.

Personnel of Commissions

Carl C. Witt, assistant supervising engineer, Bureau of Valuation of the Interstate Commerce Commission, with headquarters at Washington, D. C., has been promoted to supervising engineer, succeeding Howard M. Jones, whose death on March 29 was reported in the *Railway Age* of April 5.

State Commissions

The Louisiana Public Service Commission has called upon the Louisiana Railway & Navigation Company to show cause why it should not be ordered to repair its entire roadway in the state of Louisiana, 306 miles, and also improve its rolling stock. A representative of the commission says that derailments are frequent and that passenger trains habitually run behind time.

United States Supreme Court

New Mexico Compensation Law

Enforceable in California

The law of New Mexico provides for the payment of \$5,000 for the death of any person caused by the negligent running of trains. In an action in the California federal courts, for the death by injury of a passenger on a train of the Atchison, Topeka & Santa Fe in New Mexico, where this sum was awarded the deceased's widow by the Circuit Court of Appeals, Ninth Circuit, the railroad company contended that the law of New Mexico upon which its liability was based is in conflict with the policy of the State of California, the Code of Civil Procedure of that state giving only such damages "as under all the circumstances of the case may be just," and the New Mexico law giving damages in a fixed amount.

The Supreme Court of the United States does not regard the California code as expressing the policy of the state to be that the aid of its courts and of the federal courts sitting in the state are to be denied the power to enforce the redress given by the law of the state where the injury was inflicted, the law not being penal. The court considers the motive and effect of the New Mexico law in question to be not punishment in the sense of a penal law, but remuneration—"damages for a civil injury."

The judgment of the lower court was therefore affirmed.—*Atchison, Topeka & Santa Fe v. Nichols*. Decided April 7, 1924. Opinion by Justice McKenna.

RAILROAD POST NO. 416, of the American Legion, Department of Minnesota, has adopted a resolution favoring the continuation of the Transportation Act without additional restrictions and amendments until it has been given a full and fair trial. Copies of the resolution were sent to the senators and congressmen from Minnesota.

A PROGRAM OF REHABILITATION of the Kansas City, Mexico & Orient will be included in the plans for reorganization which are to be completed within 30 days, according to W. T. Kemper, receiver. Mr. Kemper also stated that the chances for the ultimate success of the road are better now than ever before. British interests which own a large portion of the outstanding stock and bonds are expected to participate in the reorganization, it was intimated.

Labor News

Announcement was made in Boston on April 4 that the strike of shopmen on the Boston & Maine, which was begun on July 1, 1922, had been called off.

The Federated Shop Crafts on the Baltimore & Ohio have made a request for a general increase of pay sufficient to restore the rates which were in force on July 1, 1921.

The Elgin, Joliet & Eastern has granted a wage increase of approximately 5 per cent to its engineers and firemen who are members of the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen.

The four train service and engine service brotherhoods will support Senator Robert M. La Follette in his campaign for the Presidency in the coming election, according to a statement made by Warren S. Stone, president of the Brotherhood of Locomotive Engineers.

The New York, New Haven & Hartford has reached an agreement with its enginemen, trainmen and yardmen, granting an increase of approximately 5 per cent in wages and providing for certain modifications in working conditions following in general the settlement made by other roads.

The Boston & Maine has made an agreement with the brotherhoods of the train service men for the establishment of an arbitration board, of six members, three to represent the company and three the brotherhoods. The chairman is to be elected from one or the other group alternately each six months. It is said that the request of the employees for an increase of 5 per cent in their pay will be taken before this board.

Yardmasters' 12-Hour Day Violation of Law

The 12-hour working day for yardmasters, which is in effect on many railways, has been declared a violation of an Interstate Commerce Commission ruling, made in 1907, in a decision handed down recently by Federal Judge Adam C. Cliffe, at Chicago. The court's decision was made in a test case brought by the government against the Atchison, Topeka & Santa Fe. The I. C. C. ruling referred to deals with the cases of yardmasters who receive train orders over the telephone, and limits their working day to nine hours. The defense of attorneys for the Atchison, Topeka & Santa Fe that the yardmasters receive information, not train orders, was over-ruled by the court.

Western Lines Begin Wage

Conference with Enginemen

Negotiations between representatives of nearly all the Western railways and the Brotherhoods of Engineers and of Firemen on the question of proposed wage increases were begun in Chicago on Wednesday, April 23. The same committee which represented the railroads at the recent conference with the trainmen acted in the present meeting. A committee to represent the brotherhoods was elected at a meeting of the general chairmen of the two brotherhoods from all the Western lines which was held on Tuesday.

As in the case of the negotiations with the trainmen this is the first attempt of the enginemen to secure wage increases on a large number of roads at one time. The efforts of the brotherhoods to get increases for enginemen on several individual Eastern lines have resulted generally in agreement on increases of about five per cent. A contract with the Brotherhood of Locomotive Engineers for the continuation, for one year, of the present wage rates and rules was recently signed by the Chicago, Rock Island & Pacific, the only western line which had negotiated with the enginemen prior to the present conference. It is expected the negotiations now going on will continue at least two or three weeks.

Foreign Railway News

A Public Corporation Takes Over German Railways

The emergency decree of February 12, providing that the administration of the German State Railways belonging to the Reich (i. e., the federal government) be transferred to an independent organization called the "Deutsche Reichsbahn," was recently approved by the Committee of Fifteen of the Reichstag and the Federal Council, according to Commerce Reports. The Minister of Traffic will have control and supervision of the Deutsche Reichsbahn until legislation defining its status is enacted.

The Deutsche Reichsbahn will have the status of a juridical person; it will operate and administer the railways belonging to the Reich, but it is not permitted to transfer, either wholly or in part, the right of operation, nor may it sell the railway system or any part of it to a third person. Only such railway material as good business judgment recommends for sale may be disposed of. Should the Reichsbahn be dissolved, its capital reverts to the Reich. All outstanding claims of the railways are assumed by the Reichsbahn, but it is liable for no other indebtedness of the Reich. Also, existing contracts in the name of the State Railways shall be binding. Permission is given to contract indebtedness in order to meet extraordinary expenditures, but such indebtedness must have the approval of the Minister of Finance.

Before making any modification of tariffs or any broad change in wages or salaries, the Reich must be consulted. The accounts of the Reichsbahn are to be audited by the federal accounting bureau. The Reichsbahn is to pay no taxes other than those to which the federal railway administration is liable under existing legislation.

This conversion of the state railways into a private corporation makes the Reichsbahn financially independent of the Reich and reliant on its own resources, although any profits that accrue must be returned to the government. In case of a deficit the Reichsbahn may borrow from the Reichsbank or any other credit agency, but it is not permitted to lose or dispose of a large portion of its properties; thus is eliminated to a degree the danger of private industrialists obtaining control of the railways.

An emergency freight schedule is now in effect on the German railways, which provides for a reduction by about 27.6 per cent of the regulation tariffs in force in December. This was adopted as an aid to the agriculturists. The reduction of other freight rates by from 10 to 20 per cent is also seriously contemplated by the Reichsbahn. On March 1 a change in passenger tariff was effective, increasing the third- and fourth-class fares. Second-class fares remain the same, but first-class fares are reduced in an effort to bring back into Germany some of the through international travel, which is chiefly first- and second-class and which had decreased to a considerable extent since last November. At the present level the third- and fourth-class fares are 36 per cent higher than prewar, second-class, 47 per cent higher, and first-class, 37 per cent higher.

Traffic conditions in the Ruhr have not improved since the beginning of 1924, particularly in the handling of freight. At the present time 4,000 freight cars are needed daily to handle all traffic, including reparation coal; in prewar times 33,000 cars were required, of which 22,000 were used for carrying coal alone. The movement of cars also is much slower, it requiring 20 days or more under present operating conditions to move cars that formerly traveled from origin to destination in four to five days.

General Resumption of Railway Operation in Mexico

With the exception of the southern part of the republic, railway service has now been resumed in practically all sections of Mexico, according to Commercial Attaché Dye at Mexico City. Even in the south, military trains are reported to be operating between Santa Lucrecia and Puerto Mexico and between Vera Cruz and Tierra Blanca. Freight service between Vera Cruz and Mexico City over the line of the Interceanic Railroad has been temporarily suspended through lack of rolling stock. The only service, therefore, now operating between these points is that of the Mexican Railway.

Equipment and Supplies

Locomotives

THE CHESAPEAKE & OHIO is getting prices on 100 heavy and 50 light Mikado type locomotives.

THE GARY TUBE COMPANY has ordered two switching locomotives from the Baldwin Locomotive Works.

THE LAURENCO MARQUES, Portuguese East Africa, has ordered four Mikado type locomotives from the Baldwin Locomotive Works.

Freight Cars

THE MIDVALE STEEL COMPANY is inquiring for from one to three tank cars.

THE NEW YORK, CHICAGO & ST. LOUIS is inquiring for 100 steel underframes for freight cars.

THE CENTRAL OF BRAZIL has renewed its inquiry through the car builders for 50 refrigerator cars.

THE McMYLER INTERSTATE COMPANY is inquiring for 20 arch-bar trucks of 40 and 50 tons' capacity.

THE AMERICAN STEEL & WIRE COMPANY has renewed its inquiry for 20 steel gondola cars of 70 tons' capacity.

THE DETROIT, TOLEDO & IRONTON is inquiring for 10 steel under-frame tank cars of 50 tons' and 10,000 gal. capacity.

THE CHESAPEAKE & OHIO, which was reported in the *Railway Age* of April 19 as having placed orders for several thousand freight cars, has distributed the orders for these cars as follows: 1,000 box and 500 hopper to the Illinois Car & Manufacturing Company; 2,000 hopper to the Standard Steel Car Company; 1,000 hopper to the General American Car Company; 1,000 hopper to the Newport News Shipbuilding & Dry Dock Company; 1,000 hopper and 600 ballast to the American Car & Foundry Company; 1,000 box to the Pullman Company.

Passenger Cars

THE ATCHISON, TOPEKA & SANTA FE is inquiring for 20 baggage cars.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS is inquiring for three coaches and four baggage cars.

THE ARGENTINE STATE RAILWAYS are inquiring through the car builders for 3 dining cars and 3 kitchen cars.

THE CHESAPEAKE & OHIO, which was announced in the *Railway Age* of April 19 as having placed orders for a number of passenger train cars, has ordered 15 express cars from the Pressed Steel Car Company.

THE CROWS NEST PASS COAL COMPANY, Ltd., of Fernie, B. C., which operates the Morrissey, Fernie & Michel Railway has ordered a motor car and trailer from the Edwards Railway Motor Car company. The motor car will seat 30 passengers, and will have a 9 ft. baggage compartment. The trailer will seat 34 passengers.

Iron and Steel

THE ATCHISON, TOPEKA & SANTA FE has ordered 4,500 tons of structural steel from the American Bridge Company.

THE SIAM STATE RAILWAYS will receive tenders until July 1 for their requirements of steel rails and fish plates. Tender forms may be obtained from Messrs. C. P. Sandberg, 100 Broadway, New York, at \$6, but the tenders themselves must be submitted at the headquarters of the Siam State Railways, Bangkok, Siam.

THE DENVER & RIO GRANDE WESTERN has ordered 10,000 tons of rails from the Colorado Fuel & Iron Company. An order for frogs and switches has been placed with the Elliott Frog & Switch Company, East St. Louis, Ill.

Machinery and Tools

Norfolk & Western Issues Big List

The Norfolk & Western will receive bids, up to April 30, on the following machine tools:

- 1—2½ in. 3-head bolt threading machine.
- 2—2½ in. motor driven double head bolt threading machines.
- 2—100 in. motor driven heavy duty vertical boring mills.
- 2—42 in. motor driven heavy duty vertical boring mills.
- 1—48 in. car wheel borer.
- 1—Heavy duty floor type horizontal boring, drilling and milling machine.
- 1—Duplex locomotive rod boring machine.
- 1—Portable cylinder boring bar.
- 1—Portable crank pin turning machine.
- 1—Dome facing machine.
- 2—60 in. heavy duty plain radial drills.
- 3—48 in. heavy duty plain radial drills.
- 1—2-spindle high speed, power feed drill.
- 4—36 in. vertical drill press.
- 2—14 in. motor driven sensitive drills.
- 2—Universal cutter and reamer grinders.
- 11—18 in. by 3 in. motor driven double floor grinders.
- 1—12 in. by 1½ in. motor driven double floor grinder.
- 6—2-ton hook type A. C. electric hoists.
- 1—Heavy duty key seat drilling and milling machine.
- 4—20 in. by 5 ft. centers, motor driven, geared head heavy duty engine lathes.
- 2—16 in. by 4 ft. centers, motor driven, geared head heavy duty engine lathes.
- 2—25 in. by 6 ft. centers, motor driven, geared head heavy duty engine lathes.
- 3—20 in. motor driven, full universal turret head brass lathes.
- 2—36 in. by 8 ft. centers, motor driven, geared head heavy duty engine lathes.
- 1—48 in. by 10 ft. centers, motor driven, geared head heavy duty engine lathe.
- 1—52 in. by 10 ft. centers, motor driven, geared head heavy duty engine lathe.
- 3—D. H. car axle lathes.
- 1—60 in. driving wheel lathe.
- 1—24 in. motor driven vertical turret lathe.
- 2—54 in. motor driven vertical turret lathes.
- 1—28 in. motor driven horizontal turret lathe.
- 1—54 in. motor driven vertical milling machine.
- 1—32 in. by 32 in. by 32 in. crank planer.
- 1—36 in. by 36 in. by 16 ft. planer.
- 1—60 in. by 60 in. by 16 ft. open side planer.
- 1—24 in. hand planer and jointer.
- 3—36 in. by 36 in. 50-ton power forcing presses.
- 2—48 in. 600-ton motor driven double end hydraulic car wheel presses.
- 1—90 in. 800-ton motor driven single end hydraulic locomotive driving wheel press.
- 1—48 in. double end punch and shear.
- 1—36 in. throat, 20 in. gap, pneumatic compression riveter.
- 3—Fuel oil rivet forges.
- 1—36 in. universal cold cut-off saw.
- 2—12 in. by 12 in. power hack saws.
- 3—40 in. rip saws.
- 1—36 in. band saw.
- 1—36 in. motor driven draw cut shaper.
- 4—36 in. motor driven crank shapers.
- 2—15 in. "Dill" slotters.
- 1—7 in. by 84 in. "Ryerson" spring forming machine.
- 1—52 in. tinners foot gap shear.
- 2—Electric battery or gasoline crane trucks.
- 1—Gasoline Tractor.
- 1—Portable valve facing machine.
- 1—1 in. to 4 in. pipe threading machine.
- 3—¼ in. to 2 in. pipe threading machines.

Inquiries were also issued on April 21 for

- 1—30 in. by 8 in. centers motor driven engine lathe.
- 1—No. 32 precision horizontal boring, drilling and milling machine.

Track Specialties

THE CHESAPEAKE & OHIO is inquiring for 2,400 tons of tie plates.

Miscellaneous

THE ILLINOIS CENTRAL has received from the Elwell Parker Electric Company 14 portable locomotive repair shop cranes to be distributed at various points on its lines between Chicago and New Orleans.

Signaling

THE NEW YORK CENTRAL is to install at Selkirk, N. Y., five miles north of Ravena, 36 Hall searchlight signals, 10 of which are dwarf signals. This interlocking will require 229 of the Hall Switch & Signal Company's type H relays.

THE NEW YORK CENTRAL has ordered from the Hall Switch & Signal Company, Garwood, N. J., 104 Hall single unit color light signals for installation at White Plains, N. Y.; Pleasantville, N. Y.; Beacon, N. Y.; Jersey Shore, Pa., and other places; also, 490 relays and 254 switch boxes.

THE UNION PACIFIC has selected the Union two-speed superimposed continuous automatic train control system for installation on 102 miles of its line, double track, between Sydney, Neb., and Cheyenne, Wyo. One hundred locomotives will be equipped with train control apparatus. The present block signal system consists of two-arm, lower quadrant semaphores controlled from d. c. track circuits. The railroad company will install the apparatus, the materials being supplied by the Union Switch & Signal Company. THE OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY is to install the Union automatic train control on 84 miles of line between Portland, Oregon and The Dalles, single track. A total of 33 locomotives will be equipped.

PASSENGER CARS ORDERED, INSTALLED AND RETIRED

Quarter	Domestic orders reported during quarter	No. installed during quarter	No. retired from service during quarter	No. owned or leased at end of quarter	No. under order or being constructed
1923					
January-March	972	792	679	54,370	1,586
April-June	330	513	555	54,328	1,450
July-September ...	173	553	531	54,349	1,231
October-December ..	338	861	948	54,262	832
Full year, 1923.....	2,214*	2,719	2,713	...	...
1924					
January-March	559	...	...	...	...

(1) Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops.

(2) Figures in remaining columns from Car Service Division, A. R. A., quarterly equipment report of passenger cars, Form C. S. 55 A. Figures cover only Class I roads reporting to Car Service Division and are not therefore strictly comparable with figures given in first two columns of table.

*Corrected figures.

FREIGHT CARS ORDERED, INSTALLED AND RETIRED

Month	Domestic orders reported during month	Installed during month	Aggregate capacity tons	Retired during month	Aggregate capacity tons	Owned at end of month	Aggregate capacity tons	On order as of first of following month	Building in R. R. shops
December, 1923	15,004	18,690	881,168	14,411	548,950	2,307,997	100,527,725	24,379	1,515
Full year, 1923	94,471*	183,367	707,367	185,508	516,695	2,310,032	100,644,107	21,696	2,417
January, 1924	6,020	15,589	554,481	12,329	411,228	2,310,570	100,767,731	40,030	2,715
February, 1924	18,365	11,386		10,466					
March, 1924	35,846								
Total for 2 months		26,975		22,795					
Total for 3 months	60,231								

(1) Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops but not rebuilt equipment.

(2) Figures as to installations and retirements prepared by Car Service Division A.R.A. published in Form CS 15-A. Figures cover only those roads reporting to the Car Service Division. They include equipment received from builders and railroad shops. Figures of installations and retirements alike include also equipment rebuilt to an extent sufficiently so that under the accounting rules it must be retired and entered in the equipment statement as new equipment. Total of cars retired will include in addition to such rebuilt cars, equipment sold to other than railroad companies such as Sandy Valley & Elkhorn equipment turned over to Consolidation Coal Company as a result of sale of S. V. & E. by Baltimore & Ohio to the coal company. Figures reported by the Car Service Division include cars owned by railroad controlled private car lines, American Refrigerator Transit, Fruit Growers Express, Pacific Fruit Express, Merchants Dispatch Transportation Company and Western Fruit Express. The railroads turned over a large number of cars to these respective companies during 1923. Such equipment is shown as retired by the railroads and installed by the car lines. Figures for the car lines mentioned show that during 1923 they installed 14,508 cars including new and cars of former railroad companies. The car lines retired 293 cars and on January 1, 1924, had 1,240 cars on order. These figures are all included in the totals shown for the full year 1923. The figure as to orders as given in the first column of table is not strictly comparable with figures relating to installations given in succeeding columns.

*Corrected figure.

Supply Trade News

The T. H. Symington Company has moved its Chicago offices to 2108 Straus building.

The Sellers Manufacturing Company, Chicago, has moved its general sales offices from 1204 McCormick building to 1927 Illinois Merchants Bank building.

The Union Switch & Signal Company will on May 1 move its New York office from 165 Broadway to the new Westinghouse building at 150 Broadway.

The Zapon Leather Cloth Company has moved its New York offices from 200 Fifth avenue to the Park-Lexington building, Park avenue and Forty-sixth street.

William C. Rudd, formerly engineer of water service of the Louisville & Nashville, and more recently connected with George W. Hubley, consulting engineer, Louisville, Ky., has opened an office as consulting engineer at 307 Haven building, Cincinnati, O.

E. A. Lundy, of the business staff of the Simmons-Boardman Publishing Company, publishers of the *Railway Age*, and business manager of Railway Signaling and the Railway Electrical Engineer, two of this company's publications, has resigned to organize the E. A. Lundy Company, with headquarters in the Union Trust Building, Pittsburgh, Pa., to take over the sales and service of the following companies in the railway field: The Line Material Company, South Milwaukee, Wis., manufacturers of line materials of all kinds for both low and high tension work; the Howell Electric Motors Company, Howell, Michigan, which company is engaged in the manufacture of poly-phase induction motors; the Matthews Engineering Company, Sandusky, O., manufacturers of automatic light and power plants for signal station, yard lighting and emergency work; the Fansteel Products Company, North Chicago, Ill., producers of electrolytic rectifiers for signal and telegraph service, and the Verona Tool Works, Verona, Pa., manufacturers of the Verona rail-spring and signal bond. Mr. Lundy is a graduate of Pratt Institute, Brooklyn, N. Y., electrical engineering department. He entered railroad service with the Atlantic Coast Line in the electrical department and a year later was transferred to the signal department, where he was engaged from March, 1913, to Sep-



E. A. Lundy



Preston Parish

tember, 1916, in various capacities on construction and maintenance work. From September, 1916, to June, 1918, he was employed in the signal department of the Long Island. He later entered the service of the Union Switch & Signal Company and remained with this company until January, 1920, at which time he resigned to accept a position with the Simmons - Boardman Publishing Company. He served this company in various capacities, which included the business managership of the Railway Electrical Engineer and Railway Signaling which position he held at the time of his resignation.

Preston Parish, formerly with the Line Material Company, South Milwaukee, Wis., has resigned to enter the service of the E. A. Lundy Company, as manager of the line materials division. Previous to his connection with the Line Material Company he spent six years in the sales organizations of the U. S. Rubber Company, the Hood Rubber Company and the Miller Rubber Company in connection with their mechanical goods department. Earl M. Allen, formerly with the Matthews Engineering Company, Sandusky, Ohio, has resigned to enter the service of the E. A. Lundy Company as signal engineer. Mr. Allen is a graduate of the University of Minnesota in electrical engineering. In 1913 he entered the service of the Great Northern on the construction and maintenance of signals. In 1914 he entered the service of the General Railway Signal Company on engineering and construction work. He entered the employ of the Interborough Rapid Transit Company in 1917 and returned to the General Railway Signal Company in 1919, and in 1920 went with the Toledo & Ohio Central on signal construction work. In 1922 he went with the Matthews Engineering Company, where he remained until his recent appointment.

The Dock & Terminal Engineering Company, New York, has acquired the engineering business formerly conducted by the Cleveland Dock Engineering Company, Cleveland, Ohio.

The Westinghouse Air Brake Company will on May 1 move its New York office from the Benenson building, 165 Broadway, to the new Westinghouse building, which has just been completed at 150 Broadway.

Edwin W. Allen, assistant district manager and district engineer of the General Electric Company, with headquarters at Chicago, has been promoted to manager of engineering, with headquarters at Schenectady, N. Y.

Harry C. May, president of the Mid-West Engine Corporation, with headquarters at Indianapolis, Ind., and formerly general manager of the Chicago, Indianapolis & Louisville and the Cincinnati, Indianapolis & Western, died in Indianapolis on April 10.

W. J. Roehl has been appointed a sales agent in the railway department of the Newport News Shipbuilding & Dry Dock Company with headquarters in the Railway Exchange building, St. Louis. J. S. Sheafe has been appointed to a similar position with headquarters at 7356 Woodlawn avenue, Grand Crossing, Chicago.

Obituary

T. W. Snow, president of the T. W. Snow Construction Company, Inc., with headquarters at Chicago, died on April 20 at Batavia, Ill.



E. M. Allen

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has rejected bids for the construction of paint and sand blast buildings at Topeka, Kans., reported in the *Railway Age* of April 5, and is calling for new bids for the construction of the sand blast building alone.

BANGOR & AROOSTOOK.—This company plans the following track work during the current year: \$150,000 for rail; \$190,000 for ties; \$61,500 for culvert renewals; \$145,000 for ballast; \$27,000 for tie plates.

BOSTON & MAINE.—This company has started reconstruction of the steel work of a bridge carrying the tracks of its Southern division over those of its Fitchburg division at East Cambridge, Mass. Masonry reconstruction on this bridge was completed last year. The cost of the project is estimated at \$150,000.

BOSTON & ALBANY.—This company has awarded a contract to the Tredennick-Hillings Company for the construction of a baggage, mail and express building at Springfield, Mass., to cost approximately \$600,000. A contract has also been awarded to the J. G. Roy & Sons Company for grading and construction of a fourth main track between Niverville, N. Y., and Post Road (2.5 miles) to cost approximately \$375,000. The Eastern Bridge & Structural Company will erect a signal tower and several signal bridges at Niverville.

COLORADO & SOUTHERN.—The Trinity & Brazos Valley contemplates the construction of an extension from Waxahachie, Tex., to Dallas, and the Fort Worth & Denver City contemplates the construction of an extension meanwhile from Fort Worth, Tex., to Dallas, according to an announcement made recently by Hale Holden, president of the Chicago, Burlington & Quincy.

ELGIN, JOLIET & EASTERN.—This company closed bids on April 21 for the construction of a powerhouse at Joliet, Ill.

ERIE.—This company is completing the plans, specifications and invitations for bids on its grade crossing elimination project for Paterson, N. J., work on which, by order of the New Jersey Public Utility Commission, must begin before May 15.

PACIFIC ELECTRIC.—This company has awarded a contract to Twohy Brothers, Portland, Ore., for the construction of a tunnel from the Hill street station to the corner of First street and Glendale avenue, Los Angeles, Cal., to cost approximately \$3,500,000.

PENNSYLVANIA.—This company, reported in the *Railway Age* of April 19, as planning the construction of a 900-ft. steel trestle and a concrete retaining wall in Cleveland, Ohio, has already awarded the contract for this construction, it being a part of the track elevation project at Cleveland.

PENNSYLVANIA.—This company has awarded a contract to M. J. McMenamin, Philadelphia, for the construction of a 5-track reinforced concrete bridge over Beck's Run on the Pittsburgh division to cost approximately \$300,000.

ST. LOUIS-SAN FRANCISCO.—This company has prepared plans for the construction of a new freight and passenger station at Sikeston, Mo. The building will be of brick and stucco and will cost approximately \$30,000. Bids for the work will be called for in the near future.

SOUTHERN PACIFIC AND LOS ANGELES & SALT LAKE.—A joint application has been filed with the Interstate Commerce Commission for authority for the construction of 11.03 miles of track in the city of Los Angeles, Cal., to permit the joint use and operation of the passenger station at Sixth street and Central avenue.

WYOMING.—The Interstate Commerce Commission has denied this company's application for a certificate authorizing the construction of an extension from Buffalo to Casper, Wyo., 125 miles. The commission has recently authorized the North & South to build a line which would parallel that of the applicant for a part of the distance, and its report says that the present traffic needs of the territory do not justify the construction of two parallel lines.

Railway Financial News

ALABAMA & VICKSBURG.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority for an issue of \$6,000,000 of first mortgage bonds. It is proposed to sell \$2,100,000 to retire an issue of 6 per cent notes and \$400,000 to recoup the treasury, at not less than 93.

Annual Report.—The annual report for the year ended December 3, 1923, shows an income balance of \$491,232 as compared with \$235,418 in 1922. The income account compares as follows:

	1923	1922
Miles of road operated.....	141	141
Passenger revenue.....	\$768,933	\$699,737
Freight revenue.....	2,449,231	2,148,854
Total operating revenue.....	3,464,104	3,063,635
Maintenance of way.....	621,502	584,742
Maintenance of equipment.....	613,292	604,115
Traffic.....	111,008	97,825
Transportation.....	1,154,929	1,153,686
General.....	145,217	140,992
Total operating expenses.....	2,664,181	2,604,018
Net revenue from railway operations.....	799,923	459,617
Taxes.....	331,378	234,587
Railway operating income.....	466,306	224,147
Gross income.....	666,528	418,603
Total deductions from gross income.....	175,297	183,185
Income balance.....	491,232	235,418

ATCHISON, TOPEKA & SANTA FE.—*Annual Report.*—The annual report for the year ended December 31, 1923, issued this week, shows net corporate income of \$42,087,801, as compared with \$34,382,371 in 1922. The income statement follows:

	1923	1922
Freight revenue.....	\$166,332,196	\$158,026,370
Passenger revenue.....	52,918,570	48,644,529
Mail, express and miscellaneous.....	19,432,970	18,453,645
Total operating revenues.....	238,683,736	225,124,544
Maintenance of way and structures.....	33,621,546	36,183,241
Maintenance of equipment.....	57,605,367	51,069,933
Traffic.....	4,216,342	3,900,057
Transportation.....	73,590,674	71,122,570
General.....	5,036,335	5,003,918
Total operating expenses.....	173,076,268	166,904,378
Net operating revenue.....	65,607,467	58,220,166
Railway tax accruals.....	20,316,491	18,395,512
Railway operating income.....	45,178,789	39,755,962
Net railway operating income.....	46,362,272	40,003,402
Other income.....	7,504,269	6,723,387
Gross income.....	53,866,541	46,726,789
Miscellaneous tax accruals.....	54,480	46,508
Rent for leased roads and other charges.....	400,517	426,655
Interest on bonds.....	11,323,743	11,871,255
Net corporate income.....	42,087,801	34,382,371
Dividends on preferred stock (5 per cent).....	6,208,685	6,208,685
Dividends on common stock (6 per cent).....	13,909,245	13,605,660
Sinking fund.....	20,162,723	39,545
Appropriation for fuel reserve fund.....		73,118
Surplus carried to Profit and Loss.....	21,925,078	14,455,363

BANGOR & AROOSTOOK.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$594,911, as compared with \$676,473 in 1922. The income statement shows the following:

	1923	1922
Freight revenue.....	\$5,589,827	\$6,252,971
Passenger revenue.....	884,634	897,562
Total operating revenues.....	6,769,803	7,437,216
Maintenance of way and structures.....	1,241,658	1,399,942
Maintenance of equipment.....	1,432,680	1,622,567
Traffic.....	51,005	49,452
Transportation.....	2,115,696	2,178,581
General.....	219,059	233,880
Total operating expenses.....	5,079,775	5,502,370
Net revenue from railway operations.....	1,690,028	1,934,846
Railway tax accruals.....	530,130	535,522
Operating income.....	1,158,344	1,397,259
Gross income.....	1,661,755	1,711,570
Total deductions from gross income.....	1,066,844	1,035,097
Net income.....	594,911	676,473
Dividends declared from surplus:		
Preferred stock.....	243,600	243,600
Common stock.....	221,950	154,400

BOSTON & MAINE.—*Annual Report.*—This company's annual report for 1923 is reviewed in an article on another page of this issue which is entitled "Boston & Maine Again Fails to Earn Charges."

CENTRAL OF GEORGIA.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$3,656,354 as compared with \$2,065,812 in 1922. A selection of the principal items in the income account follows:

	1923	1922	Increase or Decrease
Average miles operated.....	1,920.64	1,919.06	1.58
Freight revenue.....	\$18,040,943	\$15,893,822	\$2,147,120
Passenger revenue.....	5,675,132	5,132,171	542,961
Total operating revenues.....	26,198,846	23,286,737	2,912,110
Maintenance of way and structures.....	3,414,982	2,983,857	431,125
Maintenance of equipment.....	5,605,847	4,389,661	1,216,186
Traffic.....	843,118	777,176	57,943
Transportation—rail line.....	10,197,285	8,824,396	1,372,890
General.....	996,165	895,264	100,901
Total operating expenses.....	21,138,070	17,941,396	3,196,674
Net revenue from railway operations.....	5,060,776	5,345,341	—285,565
Railway tax accruals.....	1,177,929	1,222,280	—44,351
Railway operating income.....	3,846,938	4,101,316	—254,379
Net railway operating income.....	3,944,371	4,392,084	—447,713
Total non-operating income.....	2,867,590	807,761	2,059,829
Gross income.....	6,811,961	5,199,846	1,612,116
Total deductions from gross income.....	3,155,607	3,134,033	21,574
Net income.....	3,656,354	2,065,812	1,590,542

CENTRAL OF NEW JERSEY.—Equipment Bonds.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$1,370,000 of 5 per cent equipment bonds, to be sold to the First National Bank of New York at 98.75.

DELAWARE & HUDSON.—Annual Report.—The annual report for the year ended December 31, 1923, issued on Monday, shows a net income of \$4,711,700, as compared with a net loss of \$476,000 in 1922. A selection of the important figures in the income account follows:

	1923	1922	Increase or Decrease
Transportation of merchandise.....	\$16,220,201	\$15,557,222	\$662,979
Transportation of coal.....	24,329,813	15,276,651	9,053,161
Passenger revenue.....	4,016,718	3,799,532	217,186
Total operating revenues.....	47,320,452	37,823,256	9,497,196
Maintenance of way and structures.....	4,414,384	5,140,223	—725,839
Maintenance of equipment.....	13,114,203	11,590,317	1,523,886
Traffic.....	486,676	526,017	—39,341
Transportation.....	19,366,916	16,085,687	3,281,229
General.....	1,692,200	1,778,333	—86,133
Total operating expenses.....	39,352,240	35,615,053	3,737,186
Net railway operating revenues.....	7,968,212	2,208,203	5,760,009
Gross railway operating income.....	8,312,800	2,553,386	5,757,414
Railway tax accruals.....	1,119,358	932,416	186,943
Net railway operating income.....	6,450,026	1,112,850	5,337,176
Total non-operating income.....	3,795,101	3,780,756	14,345
Gross income.....	10,245,127	4,893,606	5,351,521
Total deductions.....	5,533,428	5,369,606	163,822
Net income.....	4,711,670	Def. 476,000	5,187,700

GEORGIA & FLORIDA.—Receiver's Certificates.—The Interstate Commerce Commission has authorized an issue of \$1,600,000 of receiver's certificates, \$800,000 to be pledged with the secretary of the treasury as substituted security for a government loan, and the remainder to be sold or otherwise disposed of to retire a like amount of receiver's certificates which matured on January 31, 1924.

GEORGIA, SOUTHERN & FLORIDA.—Debenture Bonds.—The Interstate Commerce Commission has authorized an issue of \$438,000 of debenture 5 per cent bonds to be exchanged for first mortgage bonds of the Hawkinsville & Florida Southern.

ILLINOIS CENTRAL.—Annual Report.—This company's annual report for 1923 is reviewed in an article on another page of this issue entitled "Illinois Central Spends \$50,000,000 for Improvements." See also excerpts from annual report on adjacent pages.

LEHIGH VALLEY.—Annual Report.—The annual report for the year ended December 31, 1923, shows a net income of \$8,586,613, as compared with a net loss of \$1,991,247 in 1922. A selection of the principal items in the income account follows:

	1923	1922	Increase or Decrease
Average miles operated.....	1,373.72	1,373.32	.40
Operating revenues:			
Anthracite coal freight.....	\$26,392,972	\$15,425,980	\$10,966,993
Bituminous coal freight.....	2,233,608	1,907,568	326,040
Merchandise freight.....	34,496,240	33,279,173	1,217,067
Passenger revenue.....	7,406,346	7,022,954	383,392
Total operating revenues.....	75,935,154	62,418,889	13,516,265
Operating expenses:			
Maintenance of way and structures.....	7,812,893	7,070,757	742,135
Maintenance of equipment.....	23,762,227	19,759,604	4,002,622
Traffic.....	1,176,966	1,241,057	—64,091
Transportation.....	32,140,661	29,152,786	2,987,875
General.....	1,563,963	1,514,445	49,518
Total operating expenses.....	66,754,214	59,023,940	7,730,274
Net operating revenue.....	9,180,939	3,394,949	5,785,991
Railway tax accruals.....	2,323,308	1,993,216	330,092
Net railway operating income.....	6,573,120	590,084	5,983,037
Dividend income.....	8,681,062	3,081,922	5,599,140
Total other income.....	9,583,294	4,832,641	4,750,653
Total income.....	16,156,414	5,422,724	10,733,690
Total deductions from income.....	7,569,802	7,413,971	155,831
Net income.....	8,586,613	Def. 1,991,247	10,577,859

MAINE CENTRAL.—Stock Changes.—The stockholders have approved the plan of President Morris McDonald to retire \$600,000 of common stock now held in the treasury and issue in its place \$600,000 preferred stock, to be distributed in lieu of dividends to the cumulative 5 per cent preferred stock.

MARYLAND & PENNSYLVANIA.—Bonds.—The Interstate Commerce Commission has authorized an issue of \$450,000 of first mortgage 6 per cent bonds, and \$450,000 of common stock, to be exchanged for \$900,000 of income bonds outstanding.

MINNEAPOLIS & ST. LOUIS.—No Immediate Reorganization.—The bondholders' committee of this company's first and refunding mortgage 4 per cent bonds and the Iowa Central first and refunding mortgage 4 per cent bonds, of which J. S. Bache is chairman, has advised that it will not be in the interest of bondholders to promulgate a reorganization in the immediate future. The committee concurs in the report of Coverdale & Colpitts, which recommended that the receivership be continued until January 1, 1927.

MISSOURI PACIFIC.—Annual Report.—The annual report for the year ended December 31, 1923, issued on Monday, shows a net income of \$121,346, as compared with a net loss of \$1,413,712 in 1922. The corporate income account compares as follows:

	1923	1922	Increase or Decrease
Operating revenues.....	\$114,607,948	\$99,921,331	\$14,686,617
Operating expenses.....	97,939,966	84,658,915	13,281,051
Net revenue railway operations.....	16,667,982	15,262,416	1,405,566
Railway taxes and uncollectible railway revenue.....	4,482,565	4,055,984	426,581
Railway operating income.....	12,185,417	11,206,433	978,985
Other operating income.....	745,543	823,584	—78,041
Total operating income.....	12,930,961	12,030,017	900,944
Deductions from operating income.....	4,037,715	3,782,982	254,733
Net railway operating income.....	8,893,245	8,247,035	646,211
Non-operating income.....	3,401,518	2,463,783	937,734
Gross income.....	12,294,763	10,710,818	1,583,945
Deductions from gross income.....	12,173,417	12,124,530	48,887
Balance—net income.....	121,346	Def. 1,413,712	1,535,058

Hearing on Acquisition of D. & R. G. W. Shares.—A hearing was held at Washington on April 21 and 22 before Director Mahaffie of the Bureau of Finance of the Interstate Commerce Commission on the application of the Missouri Pacific for authority to acquire 150,000 shares of the stock of the Denver & Rio Grande Western in connection with the reorganization of the latter. The application was opposed by the attorney general of Colorado.

NEW YORK, CHICAGO & ST. LOUIS.—Bonds.—This company has applied to the Interstate Commerce Commission for authority to nominally issue and sell or pledge \$26,058,000 of refunding mortgage 5½ per cent gold bonds to reimburse the treasury for expenditures and actually issue from time to time as need may arise \$86,010,000 of refunding mortgage bonds. No contracts have been made for the sale of the bonds but it is stated that the \$26,158,000 will probably be purchased by the Guaranty Company of New York and associates.

NORFOLK SOUTHERN.—Annual Report.—The annual report for the year ended December 31, 1923, shows a net income of \$374,350, as compared with \$109,051 in 1922. A selection of the principal items in the income account follows:

	1923	1922
Freight revenue.....	\$7,354,159	\$6,469,657
Passenger revenue.....	1,479,625	1,476,853
Total operating revenues.....	9,386,653	8,412,937
Maintenance of way and structures.....	1,216,135	1,182,652
Maintenance of equipment.....	1,501,128	1,296,602
Traffic.....	285,639	262,024
Transportation.....	3,749,064	3,498,665
General.....	365,914	349,349
Total operating expenses.....	7,125,645	6,595,435
Net revenue from railway operation.....	2,261,008	1,817,522
Railway tax accruals.....	459,167	402,837
Total operating income.....	1,798,043	1,364,077
Gross income.....	1,884,372	1,500,608
Deductions from income.....	1,510,022	1,391,557
Net income.....	374,350	109,051

*Includes law expenses of \$22,000 incurred in 1920 and previous years.

NORTHERN PACIFIC.—Annual Report.—This company's annual report for 1923 is reviewed in an article on another page of this issue entitled "Northern Pacific Suffers From Low Rate Level."

OIL FIELDS SHORT LINE.—Abandonment.—This company has been authorized by the Interstate Commerce Commission to

(Continued on page 1068)

Annual Report

Illinois Central Railroad Company—Seventy-fourth Annual Report

To the Stockholders of the Illinois Central Railroad Company:

The Board of Directors herewith submits the following report of the operation and affairs of your company for the year ended December 31, 1923.

The number of miles of road operated as of December 31, 1922, was 4,784.64
The number of miles operated as of December 31, 1923, was... 4,845.48
The average number of miles of road operated during the year was 4,840.25

INCOME

A summary of the income for the year ended December 31, 1923, as compared with the previous year is stated below.

	1923	1922	Increase+ Decrease—
Average miles operated during year.....	4,840.25	4,784.52	+55.73
Railway operating revenues:			
Freight (including bridge tolls and miscellaneous freight).....	\$127,081,545.93	\$119,849,020.19	+7,232,525.74
Passenger (including bridge tolls and miscellaneous passenger).....	27,042,400.60	24,264,250.53	+2,778,150.07
Mail.....	2,154,226.97	2,158,420.02	—4,193.05
Express.....	3,729,925.72	3,570,474.46	+159,451.26
Other passenger train....	1,182,586.26	1,029,237.60	+153,348.66
Other transportation.....	1,968,435.94	1,709,548.75	+258,887.19
Incidental and joint facility.....	2,467,860.26	2,279,435.91	+188,424.35
Total railway operating revenues.....	\$165,626,981.68	\$154,860,387.46	+10,766,594.22
Railway operating expenses:			
Maintenance of way and structures.....	\$24,406,197.70	\$20,538,117.07	+3,868,080.63
Maintenance of equipment.....	39,445,188.61	36,236,119.65	+3,209,068.96
Traffic.....	2,408,275.24	2,314,554.49	+93,720.75
Transportation.....	61,989,250.05	55,934,968.78	+6,054,281.27
Miscellaneous operations..	1,098,724.85	997,772.66	+100,952.19
General.....	3,834,302.60	3,606,447.59	+227,855.01
Transportation for investment—Cr.	Cr. 752,707.92	Cr. 498,710.92	—253,997.00
Total railway operating expenses.....	\$132,429,231.13	\$119,129,269.32	+13,299,961.81
Net revenue from railway operations.....	33,197,750.55	35,731,118.14	—2,533,367.59
Railway tax accruals.....	9,672,915.44	11,208,967.28	—1,536,051.84
Uncollectible railway revenues.....	24,052.46	15,413.11	+8,639.35
Railway operating income.....	\$23,500,782.65	\$24,506,737.75	—1,005,955.10
Equipment rents—net debit.....	495,591.20	Cr. 725,590.81	+1,221,182.01
Joint facility rent—net debit.....	98,947.61	111,200.64	—12,253.03
Net railway operating income.....	\$22,906,243.84	\$25,121,127.92	—2,214,884.08
Nonoperating income.....	6,816,739.73	4,104,464.81	+2,712,274.92
Gross income.....	\$29,722,983.57	\$29,225,592.73	+497,390.84
Deductions from gross income.....	14,237,909.74	13,135,916.81	+1,101,992.93
Net income.....	\$15,485,073.83	\$16,089,675.92	—604,602.09
Disposition of net income:			
Income appropriated for investment in physical property.....	\$98,887.41	\$34,786.13	+64,101.28
Total appropriations of income.....	\$98,887.41	\$34,786.13	+64,101.28
Income balance transferred to credit of profit and loss.....	\$15,386,186.42	\$16,054,889.79	—668,703.37

RAILWAY OPERATING REVENUES

"Railway Operating Revenues" amounted to \$165,626,981.68 this year as compared with \$154,860,387.46 last year, an increase of \$10,766,594.22, or 6.95 per cent.

"Freight Revenue" increased \$7,232,525.74, or 6.03 per cent, due to the larger volume of traffic handled. There were no substantial changes in rates during the year. The tons of revenue freight carried one mile were 15,069,986,030, an increase of 918,168,784 ton miles, or 6.49 per cent, as compared with the previous year. The average rate per ton per mile was .843 cent, a decrease of .004 cent, or 0.47 per cent, compared with last year. The more important increases in tonnage transported during the year were in bituminous coal, building materials, lumber, refined petroleum and its products, and in other manufactures and miscellaneous. There was a decrease in the tonnage of wheat and corn.

There was an increase of \$2,778,150.07, or 11.45 per cent, in "Passenger Revenue" due to a general increase in passenger travel. The number of passengers carried one mile was 895,442,556, an increase of 79,597,875, or 9.76 per cent, compared with last year. There was an increase in the average revenue per passenger per mile of .046 cent, or 1.55 per cent, due to there having been a greater increase, relatively, in through traffic, with a slight increase in the average haul per passenger, than in Chicago suburban traffic.

"Mail Revenue" decreased \$4,193.05, or 0.19 per cent. Conditions with respect to mail were substantially the same this year as in the previous year.

There was an increase of \$159,451.26, or 4.47 per cent in "Express Revenue," due to the heavier volume of express traffic.

The increase of \$153,348.66, or 14.90 per cent in "Other Passenger Train Revenue," was due to increased milk and newspaper shipments carried on passenger trains.

There was an increase of \$258,887.19, or 15.14 per cent in "Other Transportation Revenue," due to increased switching receipts and "Special Service Train Revenue."

The increase of \$188,424.35, or 8.27 per cent in "Incidental and Joint Facility Revenue" was due to increases in "Dining and Buffet Revenue," "Station, Train and Boat Privileges," "Parcel Room," "Storage-Baggage," "Demurrage," "Rents of Buildings and Other Property," and "Joint Facility Operating Revenue," partly offset by decreases in "Hotel and Restaurant," "Storage-Freight," and "Miscellaneous Revenues."

RAILWAY OPERATING EXPENSES

"Railway Operating Expenses" were \$132,429,231.13, as compared with \$119,129,269.32 last year, an increase of \$13,299,961.81, or 11.16 per cent.

The increase of \$3,868,080.63, or 18.83 per cent in "Maintenance of Way and Structures Expenses" was due in part to charges incident to the extensive road and Chicago terminal improvement work carried on during the year, and in part to the heavier volume of traffic transported this year as compared with last year.

The increase of \$3,209,068.96, or 8.86 per cent in "Maintenance of Equipment Expenses," was on account of increased expenditures for repairs to locomotives and freight train cars, due to the larger volume of business handled this year compared with the previous year, and to increased depreciation charges by reason of additional equipment acquired.

There was an increase in "Traffic Expenses" of \$93,720.75, or 4.05 per cent, due in part to increased advertising and in part to increased forces, largely at outside soliciting agencies.

The increase of \$6,054,281.27, or 10.82 per cent in "Transportation Expenses" was due to general increase in freight and passenger train service on account of the greater volume of traffic transported this year as compared with last year.

There was an increase of \$100,952.19, or 10.12 per cent in "Miscellaneous Operations," due to increased expenses of the dining and hotel service by reason of the increased passenger travel.

The increase of \$227,855.01, or 6.32 per cent in "General Expenses," was due largely to an increase in clerical forces and increases in law expenses, stationery and printing, pensions and other expenses, offset in part by decreased valuation expenses.

The decrease in expenses by reason of the increase of \$253,997.00 in "Transportation for Investment—Credit," was due to the increase in improvement work carried on during the year, as compared with last year.

RAILWAY TAX ACCRUALS

"Railway Tax Accruals" amounted to \$9,672,915.44 this year, as compared with \$11,208,967.28 last year, a decrease of \$1,536,051.84, or 13.70 per cent. The decrease was due partly to the inclusion in the taxable income of the previous year of the amounts received in settlement for the Federal Control and Guaranty periods, applicable to Federal income taxes. There was a general increase in state taxes this year as compared with last year due to increased assessments and levy rates; also a substantial increase in the Illinois charter tax on account of increased earnings on charter lines this year as compared with the previous year.

NONOPERATING INCOME

"Nonoperating Income" this year amounted to \$6,816,739.73, as compared with \$4,104,464.81 last year, an increase of \$2,712,274.92. This increase was due to a dividend of \$1,000,000.00 received from the Madison Coal Corporation in the current year, whereas no similar income was received in the previous year; to the receipt of \$672,454.29 interest on Louisville, New Orleans & Texas Railway Company Second Mortgage Income Bonds this year, whereas no interest was received on these bonds last year; additional interest in the amount of \$618,739.27, substantially all of which consisted of interest received on United States securities owned and interest on additional holdings of The Yazoo and Mississippi Valley Railroad Company's Five Per Cent Gold Improvement Bonds; an increase of \$103,784.41 in interest on deposits with bankers and others; and an increase of \$373,999.61 in other income items, the major part of which was due to the inclusion of a charge in this account last year covering the cancellation of a portion of the Guaranty Period claim under Section 209 of the Transportation Act, 1920, disallowed by the Interstate Commerce Commission in a settlement effected June 27, 1922. These increases were partly offset by decreases of \$30,512.29 in "Income on Capital Advances to Affiliated Companies" and of \$26,190.27 in "Miscellaneous Rent Income" and "Income From Lease of Road."

DEDUCTIONS FROM GROSS INCOME

"Deductions From Gross Income" amounted to \$14,237,909.74 this year as against \$13,135,916.81 last year, an increase of \$1,101,992.93. There was an increase in "Interest on Funded Debt" of \$827,336.26, due to the inclusion of interest during the entire year on securities issued last year, and, in addition, interest for portions of the year on securities issued during the current year, less interest on Equipment Trusts and other securities retired, as compared with a part year's interest on securities issued during the previous year, a comparison of which may be made by reference to Table No. 7 of the report this year, and the corresponding table for the previous year; an increase of \$96,704.53 in "Interest on Unfunded Debt," consisting largely of interest allowed on paid subscriptions for Preferred Stock during the year and interest on short-term loans; an increase of \$100,111.62 in "Separately Operated Properties—Loss," the major portion of which was due to losses from the operations of elevators at New Orleans; and an increase of \$487,807.20 in "Miscellaneous Income Charges," consisting of a deficit of \$178,419.30 in income interest requirements of the Dubuque and Sioux City Railroad Company assumed by your Company in the current year, there being no similar charge in the previous year, the inclusion of a credit of \$308,078.07 last year covering repayment by the Dubuque and Sioux City Railroad Company of amounts assumed by your Company in prior years, and other minor items amounting to \$1,309.83. As against these increases there was a reduction in "Rent for Leased Roads" of \$408,546.53, due to decreases in rental payments to the Dubuque and Sioux City Railroad Company and the Chicago, St. Louis & New Orleans Railroad Company aggregating \$445,296.53, offset in part by the rent of \$36,750.00 payable under the lease of property of the Chicago, Memphis & Gulf Railroad Company effective January 1, 1923, and covering interest on the outstanding bonds of that company; and decreases in other minor items aggregating \$1,420.15.

CAPITAL STOCK AND FUNDED DEBT

The Board of Directors on October 10, 1923, adopted a resolution extending to the stockholders of record October 23, 1923, the privilege of subscribing at par to an additional issue of Six Per Cent Convertible Preferred Stock, Series "A," to the extent of ten per cent of their holdings of common shares, amounting to \$10,952,180, payable in two installments as follows: fifty per cent on or before December 1, 1923, and fifty per cent on or before March 1, 1924. At the close of the year all but 76.1 shares of the \$10,952,180 issue had been sold, and \$10,665,400 had been paid thereon. Certificates of stock for full paid subscriptions will be issued March 1, 1924. Preferred shares to the amount of \$18,000.00 par value were converted into common shares during the year.

Illinois Central Equipment Trust Certificates, Series "J," amounting to \$14,003,000.00 were issued and sold May 1, 1923.

Illinois Central Railroad Company Refunding Mortgage Four Per Cent Gold Bonds, amounting to \$1,438,000.00, were issued in March, 1923, under the terms of the mortgage, to refund \$968,000.00 par value of Kankakee & Southwestern Railroad Company First Mortgage Five Per Cent Bonds and \$470,000.00 par value Belleville and Carondelet Railroad Company Six Per Cent Bonds matured and retired.

The execution of a supplemental indenture was authorized in March, 1923, increasing the rate of interest on Illinois Central Railroad Company Refunding Mortgage Gold Bonds, and in accordance with this supplemental indenture, the rate of interest was increased from four to five per cent on \$13,447,000.00 par value of these bonds in the treasury, including the \$1,438,000.00 above referred to. The bonds carrying the increased interest rate were sold April 2, 1923.

Under the terms of the Illinois Central Railroad Company and Chicago, St. Louis & New Orleans Railroad Company Joint First Refunding Mortgage, there were issued to your Company in May, 1923, \$3,168,900.00 Five Per Cent Bonds, Series "A," in reimbursement for improvements made to the mortgaged properties. Under the same mortgage, \$2,000.00 par value of Series "A," or Dollar Bonds, were issued in exchange for \$400 Sterling Bonds, the equivalent of \$1,940.00 of Series "B," or Sterling Bonds, upon the payment of the difference of \$60.00 in cash.

There was called for payment and retired in March, 1923, the balance of \$3,848,000.00 outstanding of the issue of Illinois Central Railroad Company One to Fifteen Year Six Per Cent Secured Notes.

On June 1, \$485,000.00 Belleville and Carondelet Railroad Company Six Per Cent Bonds matured. Of these bonds \$470,000.00 outstanding with the public were refunded by the issue of Illinois Central Railroad Company Refunding Mortgage Gold Bonds, and \$15,000.00 held in the treasury were canceled.

There were retired and canceled under the terms of the respective trust agreements Illinois Central Equipment Trust Certificates, Series "A," \$400,000.00; Series "B," \$350,000.00; Series "C," \$198,000.00; Series "D," \$190,000.00; Series "E," \$550,000.00; Series "H," \$217,000.00; Series "I," \$443,000.00; Chicago, St. Louis & New Orleans Railroad Company Equipment Trust Certificates, Series "A," \$570,000.00; Government Equipment Trust No. 33, \$647,100.00; and under the equipment contract with The Pullman Company, \$138,364.90, a total of \$3,703,464.90.

SECURITIES OWNED

In December, 1923, there was received from the Central of Georgia Railway Company \$15,000,000.00 par value of its common stock in exchange for a like amount of Six Per Cent Cumulative Preferred Stock surrendered for cancellation.

During the year there was acquired \$3,333.34 par value of the capital stock of the Paducah & Illinois Railroad Company. This represents one-third of the capital stock of that company outstanding, your Company having under an agreement effective September 1, 1920, acquired a one-third interest in that company, equally with the Chicago, Burlington & Quincy Railroad Company and The Nashville, Chattanooga & St. Louis Railway.

There was received from The Yazoo and Mississippi Valley Railroad Company in settlement for advances made for improvements to its property \$1,058,000.00 of its Five Per Cent Gold Improvement Bonds.

The Peoria and Pekin Union Railway Company redeemed \$12,500.00 par value of its Five Per Cent Debenture Bonds maturing August 1, 1923.

The Ocean Steamship Company of Savannah called for payment on July 1, 1923, \$211,000.00 par value of its Seven Per Cent Gold Bonds of 1925 owned by your Company.

During the year \$4,000,000.00 par value United States Victory Liberty Loan Four and Three-quarters Per Cent Notes of 1923 were exchanged for a like amount of United States Treasury Four and Three-quarters Per Cent Notes of 1927, Series "B," and there were purchased \$500,000.00 par value United States Treasury Four and Three-quarters Per Cent Notes of 1925, Series "A," and \$4,000,000.00 par value United States Treasury Five and One-half Per Cent Notes of 1924, Series "B." The three foregoing United States Government security issues, together with \$2,500,000.00 par value United States Third Liberty Loan Four and One-quarter Per Cent Bonds of 1928 and \$1,313,000.00 par value United States Treasury Four and One-quarter Per Cent Notes of 1926, Series "B," were sold.

Additions and Betterments—Expenditures:

There was expended during the year for "Additions and Betterments" (including improvements on subsidiary properties) \$50,729,720.78. The following is a classified statement of these expenditures:

PHYSICAL CHANGES

The following is a summary of the more important improvements during the year, the cost of which was charged, wholly or in part, to "Road and Equipment":

Additions and Betterments—Road:

Progress has been made in the Chicago terminal improvement work. The grading for depression and elevation of the roadbed between 29th and 51st streets, to provide for future viaducts and subways, was practically completed. This work involved the reconstruction of the eight existing main tracks, the relocation of telephone, telegraph and electrical lines, the construction of 3,100 feet of concrete retaining wall and the reinforcement and reconstruction of a number of city sewers. The elevation of main tracks through Harvey, Ill., was begun; four main tracks were completed and placed in service before the end of the year, and the fill and tracks for additional main tracks Nos. 5 and 6 were partly completed. Work was started on a subway at Richton, Ill., and on the construction of a concrete and steel viaduct for an overhead connection with the Chicago Junction Railway at 41st Street, Chicago. The grade crossings of your Company's tracks with those of the Grand Trunk Railway and the Baltimore & Ohio Chicago Terminal Railroad at Harvey, Ill., were eliminated. The grading for Markham Yard, between Harvey, Ill., and Homewood, Ill., was continued and tracks were laid and surfaced in the Northbound Classification Yard and the Northbound Departure Yard, making the track work on the Northbound Unit practically complete. The concrete deck on the subway under Markham Yard at 15th Street, Harvey, Ill., was completed and work was begun on the three section concrete subway at 171st Street, Hazel Crest, Ill.

The subways at Main Street and Elliott's Park, Matteson, Ill., referred to in the report of the previous year, were extended to take care of additional main tracks Nos. 5 and 6. New passenger station facilities were constructed at 79th Street, Chicago, and at Homewood, Ill. The construction of new interlocking plants at the south end of Markham Yard, Homewood, Ill., and at Richton, Ill., was begun and practically completed. Elevator bucket-type coaling stations of 75-ton capacity were constructed at 83d Street, on the South Chicago Branch, Chicago, Blue Island, Ill., Fordham Yard and Matteson, Ill. Fifth and sixth main tracks between Richton, Ill., and Hazel Crest, Ill., a distance of 6.2 miles, were practically completed.

Four hundred sixty-nine company sidings, covering 79.49 miles of track, and 160 industrial sidings were built or extended.

Work on double tracking from a point about three miles east of Central City, Ky., to Dawson Springs, Ky., a distance of 40.66 miles, was started during the year; at the close of the year seventy-five per cent of the grading had been completed, and tracks had been laid for fourteen per cent of the mileage. The construction of double track from Clarks, Ky., to the Tennessee River, a distance of 16.5 miles, was started, and eighty per cent of the grading and track work was completed at the close of the year.

Construction of a second main track from Spaulding, Ill., to Springfield, Ill., a distance of 7.36 miles, was started and practically completed.

Second main track between West Junction (Clinton, Ill.) and Salt Creek Siding, Ill., a distance of 2.24 miles, was constructed.

Third main track between Kankakee, Ill., and Otto, Ill., a distance of 2.71 miles, was completed.

Reductions in grades to .3 of one per cent through Monee, Ill., a distance of 3.28 miles; Magnet Hill, Ill., a distance of 6.39 miles, and Alma, Ill., a distance of 1.33 miles, were completed. Grade reduction through Paxton, Ill., a distance of 1.7 miles, was started.

Elevation of tracks through Champaign, Ill., involving the construction of six subways, was started.

Construction of new passenger station facilities at Mexico, Ky.; Mercer, Ky.; Glenwild, Miss., and Ponchatoula, La., referred to in the report of the previous year, was completed. New passenger station facilities were constructed at Anna, Ill., and Vandalia, Ill., and new passenger and freight stations were constructed at Bethany, Ill.; Barclay, Ill.; Beaver Dam, Ky.; Morganfield, Ky.; Covington, Tenn., and Brilliant, Ala. The construction of new passenger stations at Champaign, Ill., and Normal, Ill., was started.

Construction of new cross-over interlocking plants for 3-track operation at Monee, Ill., and Peotone, Ill., and the electrification of the interlocking plant at Kankakee, Ill., referred to in the report of last year, were completed. New cross-over interlocking plants for 3-track operation at Chebanse, Ill.; Clifton, Ill.; Ashkum, Ill., and North Gilman, Ill., were completed.

Construction of a 300-ton coaling chute at McComb, Miss., and installation of a train air-testing plant at Dubuque, Iowa, referred to in the report of last year, were completed.

Construction of 300-ton coaling stations at Dubuque, Iowa; Council Bluffs, Iowa, and Central City, Ky., and of a 500-ton coal chute at Gilman, Ill., was begun.

Installation of 60-foot, 150-ton track scales at Kankakee, Ill.; Cairo, Ill., and Evansville, Ind., referred to in the report of the previous year, was completed, and the work of installing similar scales was begun at Champaign, Ill.; Mounds, Ill.; East St. Louis, Ill.; Jackson, Tenn., and Harahan "B" Yard, New Orleans, La.

Water treating plants were installed at Clinton, Ill.; Dixon, Ill.; Panola, Ill.; Parkersburg, Iowa; Iowa Falls, Iowa, and Webster City, Iowa.

Crescoted water tanks of 100,000-gallon capacity were erected at Paxton, Ill.; Gibson City, Ill.; Mount Pulaski, Ill.; Clinton, Ill.; Bloomington, Ill.; Le Mars, Iowa; Millington, Tenn.; McComb, Miss.; Hammond, La.; Crystal Springs, Miss.; Brookhaven, Miss., and at Decatur, Ill., two being erected at the latter place; 100,000-gallon steel water tanks were constructed at Panola, Ill.; Parkersburg, Iowa; Iowa Falls, Iowa, and Webster City, Iowa.

Construction of signal bridges with color light signals between Matteson, Ill., and Kankakee, Ill., a distance of 28 miles, replacing lower quadrant semaphore signals, referred to in the report of last year, was completed. Signal bridges were installed between Kankakee, Ill., and Gilman, Ill., so as to permit the use of the main tracks for the operation of trains in either direction. The installation of block signal between Graham, Ky., and Fox Run, Ky., a distance of 15.7 miles, was completed. Block signals were also installed between Paducah, Ky., and Jackson, Tenn., a distance of 105.7 miles.

One thousand seven hundred thirty-three lineal feet of permanent bridges and trestles were constructed, replacing pile and timber bridges and trestles; 696 lineal feet of permanent bridges and trestles and 19,929 lineal feet of pile and timber bridges and trestles were rebuilt. Thirty-nine miles of track were ballasted and brought up to standard, and the embankments were widened on thirty-nine miles of track, preparatory to placing ballast.

Additions and Betterments—Equipment:

Fifteen Mountain type passenger locomotives, 120 Mikado type freight locomotives, twenty-five Central type freight locomotives and five 8-wheel switching locomotives were purchased. Twenty-one Consolidation type freight locomotives were converted into Mikado type freight locomotives, and two Mogul type freight locomotives were converted into Suburban type passenger locomotives. Fifty-five locomotives of various classes were superheated.

Five dining cars were purchased, and seven passenger-train cars were retired.

Thirteen thousand one hundred thirty-four freight-train cars were purchased, and 6,772 freight-train cars were retired or transferred to other classes.

GENERAL REMARKS

There was considerable activity in business throughout the territory served by your Company during the year, and the volume of traffic handled was correspondingly heavy. Taking the year as a whole, the volume of traffic transported was the heaviest of any year in the history of your Company, and this traffic, even at the peak of its movement, was handled satisfactorily and without congestion, due largely to the policy in previous years of improving and increasing facilities in anticipation of the continued growth of business.

There was expended for capital account \$50,729,720.78 during the year in the further improvement of your properties. To provide for these expenditures it was necessary to issue and sell additional securities. Due to the credit standing of your Company, it was possible to accomplish this financing on comparatively advantageous terms.

The number of stockholders of record on the books of your Company at the close of the year was 19,470, of whom 14,953 were holders of common shares and 4,517 were holders of preferred shares. There were 19,427 shareholders last year.

The Board of Directors takes pleasure in expressing its appreciation to the officers and employees for their loyal and efficient services.

By order of the Board of Directors. C. H. MARKHAM,

[ADVERTISEMENT]

(Continued from page 1065)

abandon, as to interstate and foreign commerce, its railroad from Clifford to Dilworth, Okla., about 5 miles.

PENNSYLVANIA.—Directors Re-elected.—At the annual election on April 22, Charles E. Ingersoll, Samuel Rea and Edgar C. Felton were re-elected directors to serve for the term of four years from this date.

PITTSBURGH, CINCINNATI, CHICAGO & ST. LOUIS.—New Director.—Bayard Henry has been elected a director to fill the vacancy caused by the death of S. S. Dennis.

SOUTHERN PACIFIC.—Equipment Trusts.—Kuhn, Loeb & Co. have sold, subject to the approval of the Interstate Commerce Commission, \$17,640,000 Southern Pacific Company 5 per cent equipment trust certificates, series "G," maturing in equal annual installments from May 1, 1925, to May 1, 1939, inclusive. The certificates were offered at 99½ per cent and accrued dividends for equal amounts of all maturities, to yield 5.08 per cent. They will be secured by standard equipment costing approximately \$22,050,000, of which 20 per cent will be paid in cash by the railroad company.

ST. LOUIS-SAN FRANCISCO.—To Consider Lease.—At the annual meeting in St. Louis on May 13 the stockholders will consider the proposal to lease the property of the Kansas City, Clinton & Springfield and to assent to the acquisition by the Kansas City, Fort Scott & Memphis of the entire outstanding capital stock of the road.

VICKSBURG, SHREVEPORT & PACIFIC.—Annual Report.—The annual report for the year ended December 31, 1923, shows an income balance of \$564,293 as compared with \$222,540 in 1922. The income account compares as follows:

	1923	1922
Miles of road operated.....	188	171
Passenger revenue.....	\$1,199,051	\$1,112,717
Freight revenue.....	2,940,793	2,326,927
Total operating revenue.....	4,460,579	3,717,970
Maintenance of way.....	689,781	631,902
Maintenance of equipment.....	802,036	655,579
Traffic.....	135,714	118,101
Transportation.....	1,439,135	1,421,490
General.....	166,966	166,566
Total operating expenses.....	3,263,204	3,016,260
Net revenue from railway operations.....	1,197,376	701,710
Railway tax accruals.....	349,589	231,319
Railway operating income.....	844,011	468,616
Gross income.....	931,668	556,318
Total deductions.....	367,375	333,778
Income balance.....	564,293	222,540

Trend of Railway Stock and Bond Prices

	April 22	Last Week	Last Year
Average price of 20 representative railway stocks.....	62.76	62.50	65.98
Average price of 20 representative railway bonds.....	85.26	85.20	82.88

Dividends Declared

Atlanta & West Point.—3½ per cent, payable June 30 to holders of record June 20.
 Georgia, Southern & Florida.—First and second preferred, 2½ per cent, payable May 29.
 Mahoning Coal Railroad.—Common, 20 per cent, payable May 1 to holders of record April 17.
 Norfolk & Western.—Common, \$1.75, quarterly, payable June 19 to holders of record May 31.
 Reading Company.—First preferred, 1 per cent, payable June 12 to holders of record May 26.
 Western Railway of Alabama.—3½ per cent, semi-annually, payable June 30 to holders of record June 20.

RENO, a small community six miles east of Paris, Texas, has reversed the time-honored custom of towns following the railroad. Reno, according to a statement issued by the National Automobile Chamber of Commerce, has moved away from the railroad to the new concrete highway that runs east from Paris. This "town" is on the Texas & Pacific; and it saw only four passenger trains a day passing through it, while about half a mile away a steady stream of traffic was passing over the concrete highway. So the town packed up all of its three business houses and moved over to the highway. Only a swimming pool was left at the old site. The population of Reno, according to the atlas, numbers seventy-five.

Railway Officers

Executive

J. H. Nuelle, general manager of the New York, Ontario & Western, with headquarters at Middletown, N. Y., has been elected vice-president, with the same headquarters.

D. McK. Ford, assistant to the director of purchases and stores of the Canadian National, with headquarters at Montreal, Que., has been promoted to assistant to the vice-president, with the same headquarters.

T. W. Evans, assistant general manager of the New York Central, with headquarters at Syracuse, N. Y., has been appointed assistant vice-president, with headquarters at New York succeeding R. D. Starbuck, promoted.

W. J. Jenks, general manager of the Norfolk & Western, with headquarters at Roanoke, Va., has been elected vice-president in charge of operation with the same headquarters. **B. W. Herrman**, assistant freight traffic manager, has been elected vice-president in charge of traffic.

Financial, Legal and Accounting

Calvin Bartlett, supervisor of land appraisals of the Wabash, with headquarters at St. Louis, Mo., has been promoted to real estate agent, with the same headquarters.

W. F. Mathieson, general auditor of the New York, Ontario & Western with headquarters at New York, has been elected assistant secretary and treasurer, with the same headquarters.

J. T. Williamson, whose appointment as superintendent of the relief department of the Chicago, Burlington & Quincy, was reported in the *Railway Age* of April 19, was born on February 6, 1884, at Minneapolis, Minn. He entered railway service in July, 1900, as an office boy in the general office of the Chicago, Burlington & Quincy at Chicago, and subsequently held the positions of clerk, tourist agent, ticket seller, depot passenger agent and traveling agent. Mr. Williamson was later appointed cashier in the local freight office and freight service inspector. He was promoted to night trainmaster at Casper, Wyo., in October, 1919, and held this position until February, 1920, when he was appointed chief clerk in the relief department at Chicago. He continued in this position until his recent promotion to the newly-created position of superintendent of the relief department, with headquarters at Chicago.

W. C. Kordsiemon, whose appointment as superintendent of the employment bureau of the Chicago, Burlington & Quincy was reported in the *Railway Age* of April 19, was born on September 15, 1872, at Quincy, Ill. He entered railway service in December, 1891, as a stenographer in the office of the division superintendent at Galesburg, Ill. In August, 1902, he was appointed secretary to the general superintendent at Chicago and he held this position until July, 1904, when he was promoted to chief clerk to the general inspector of transportation. Mr. Kordsiemon was appointed chief clerk to the assistant to the vice-president and general superintendent of transportation in January, 1916, and in January of the following year, he was promoted to the staff of the vice-president. He held this position until February, 1917, when he was appointed assistant superintendent of the employment department, with headquarters at Chicago. Mr. Kordsiemon continued in this capacity until his recent promotion to superintendent of the employment department.

Operating

F. E. Williamson, general superintendent of the New York Central with headquarters at Albany, N. Y., has been appointed assistant general manager, with headquarters at Syracuse, N. Y., succeeding T. W. Evans, promoted.

E. Crawford, superintendent of car service of the Canadian National with headquarters at Winnipeg, Man., has been pro-

moted to division superintendent, with headquarters at Regina, Saskatchewan, succeeding I. A. Macpherson, who has been transferred.

J. E. Craver, whose appointment as general superintendent of the Northern Pacific, lines west of Paradise, Mont., was reported in the *Railway Age* of March 15, entered railway



J. E. Craver

service in 1880 as night operator on the Chicago, Burlington & Quincy at West Quincy, Mo., and in the following year was transferred to Galesburg, Ill. Mr. Craver entered the service of the Northern Pacific as an operator and dispatcher at Billings, Mont., in 1886. He was appointed train dispatcher on the Mobile & Ohio, in 1889, but returned to the Northern Pacific the following year as train dispatcher. He was subsequently promoted to chief dispatcher and later to trainmaster, with headquarters at St. Paul, Minn. In 1907, he was promoted to superintendent of the North Dakota division, with headquarters at Fargo, N. Dak., and was transferred to Seattle, Wash., in 1911. Mr. Craver was promoted to acting general superintendent of the Western district in May, 1919, returning to his former position as superintendent of the Seattle division in July of that year. He was again promoted to acting general superintendent of the Western district, in April, 1920, and in October of that year was promoted to general superintendent of the Central district. Mr. Craver continued in this position until April, 1924, when he was appointed general superintendent of the lines west of Paradise, Mont.

Frank L. C. Bond, whose promotion to general superintendent of the Central region of the Canadian National, with headquarters at Toronto, Ont., was announced in the *Railway*



F. L. C. Bond

Age of April 19, page 1015, was born on February 21, 1887, at Montreal, Que. He was graduated from McGill University with the degree of bachelor of science in 1898. He entered railway service in 1897 with the Canadian Pacific on the construction of a line near Ottawa, Ont. A short time thereafter he entered the service of the Grand Trunk as assistant engineer. In 1902 he was engaged in subway construction in New York. The following year he was appointed resident engineer of the Eastern division of the Grand Trunk and served in that capacity until 1913 when he was promoted to division engineer. In 1917 and 1918 he served with the Canadian forces in France as a major of railway engineers. From December, 1918, until the time of the consolidation of the Grand Trunk with the Canadian National, he served the former company as chief engineer. In March, 1923, he was appointed regional chief engineer of the Canadian National, with headquarters at Toronto, Ont., the position he held at the time of his recent promotion.

R. J. Martin, assistant to the vice-president and general manager of the Pacific Fruit Express, with headquarters at San Francisco, Cal., has been promoted to assistant general manager, with the same headquarters, succeeding H. Giddings, whose promotion to vice-president and general manager was reported in the *Railway Age* of April 5. **R. G. Herda** has been appointed assistant to the vice-president and general manager, succeeding Mr. Martin.

Walter U. Appleton, whose promotion to general manager of the Atlantic region of the Canadian National, with headquarters at Moncton, N. B., was announced in the *Railway*



W. U. Appleton

Age of April 19, page 1015, was born on January 29, 1878, at Moncton, and was educated in the public schools of that city. He entered the service of the Intercolonial, now a part of the Canadian National, as a junior clerk on October 13, 1890, and was later promoted to clerk. In 1895 he became a machinist's apprentice. A year later he was appointed chief clerk to the superintendent of rolling stock and in 1904 he was promoted to assistant to the superintendent of rolling stock. In 1909 Mr. Appleton was appointed general master mechanic, which position he held until 1913, when he was promoted to superintendent of motive power, and in December, 1918, he was appointed mechanical superintendent. On September 15, 1920, he was appointed general superintendent of rolling stock at Moncton, and on March 1, 1923, he was promoted to general superintendent of the Atlantic region, which position he held at the time of his recent promotion.

R. W. Simpson, whose promotion to assistant general manager of the Atlantic region of the Canadian National, with headquarters at Moncton, N. B., was announced in the *Railway*



R. W. Simpson

Age of April 19, page 1015, was born in Scotland and came to Canada at an early age where he received his elementary education. He was graduated from the Royal Military College at Kingston, Ont., in civil engineering and entered the service of the Intercolonial, now a part of the Canadian National, on July 22, 1889, in the chief engineer's office, where he remained until August, 1902, when he was appointed assistant chief engineer. In August, 1902, he was attached to the staff of the general manager and in June, 1909, he became advisory engineer to the board of management. In November, 1912, he was appointed advisor to the general superintendent and in September of the next year he was appointed assistant to the general manager and he also held the position of general fuel and tie agent. In December, 1918, Mr. Simpson was appointed assistant to the general superintendent and in June, 1922, he was appointed acting general superintendent. Upon the co-ordination of all government-owned lines into the Canadian National in March,

1923, Mr. Simpson was appointed assistant to the general manager of the Atlantic region, which position he held at the time of his recent promotion.

H. H. Brewer, assistant general manager of the Canadian National, Western region, with headquarters at Winnipeg, Man., has retired from active service. **A. Wilcox**, general superintendent of the Manitoba division, with headquarters at Winnipeg, Man., has been promoted to general superintendent of transportation of the Western region, with the same headquarters. **N. B. Walton**, assistant general superintendent of the British Columbia division, with headquarters at Prince Rupert, B. C., has been promoted to general superintendent of the Manitoba division, succeeding Mr. Wilcox.

C. B. Pratt, superintendent of the Oklahoma-Southern division of the Chicago, Rock Island & Pacific, with headquarters at Ft. Worth, Tex., has been transferred to the Kansas division, with headquarters at Herington, Kans., succeeding A. E. Walker, whose promotion to general superintendent of second district was reported in the *Railway Age* of April 5. **J. J. Breheny**, supervisor of operation, with headquarters at Chicago, has been promoted to superintendent of the Oklahoma-Southern division, succeeding Mr. Pratt. **A. T. Abbott**, general superintendent of the first district, has been appointed superintendent of the Iowa division, with headquarters at Des Moines, Ia., succeeding E. J. Gibson, whose death on March 23 was reported in the *Railway Age* of March 29.

Traffic

W. H. Askew, district freight agent of the Gulf, Mobile & Northern, with headquarters at Kansas City, Mo., has been promoted to assistant general freight agent, solicitation, with headquarters at Mobile, Ala. **J. S. Chartrand**, commercial agent, with headquarters at St. Louis, Mo., has been promoted to district freight agent, with headquarters at Kansas City, succeeding Mr. Askew. **R. L. Lichty**, traveling freight agent, with headquarters at Kansas City, has been promoted to commercial agent, with the same headquarters, the position of traveling freight agent at Kansas City having been abolished.

C. L. Senter, whose appointment as assistant general freight agent of the Seaboard Air Line, with headquarters at Jacksonville, Fla., was announced in the *Railway Age* of April 5, page 912, was born on November 23, 1887, at Blue Springs, Tenn. He attended high school and entered the service of the Queen & Crescent freight agency at Chattanooga, Tenn., in 1903 as a messenger and later served in various other clerical capacities. In 1905 he was appointed assistant to the secretary of the Chattanooga Manufacturers' Association and in 1906 re-entered railway service as a rate clerk for the Alabama Great Southern at Birmingham, Ala. In 1907 he entered the service of the Tennessee Coal, Iron & Railroad Company as a rate clerk at Birmingham and a few months later went with the Seaboard Air Line, in the same capacity, at Jacksonville. In 1908 Mr. Senter was appointed a route clerk for the Atlantic Coast Line at High Springs, Fla., and a year later was appointed a rate clerk at Wilmington, N. C. In 1911 he was transferred to Savannah, Ga., in the same capacity and two years later was appointed chief clerk to the traffic manager of the Georgia, Florida & Alabama, with headquarters at Bainbridge, Ga. Mr. Senter was promoted to traffic manager, with the same headquarters, in 1920, the position he held at the time of his recent appointment as assistant general freight agent of the Seaboard Air Line.

Mechanical

J. Dietrich, master mechanic of the Lincoln division of the Chicago, Burlington & Quincy, with headquarters at Lincoln, Nebr., has been given extended jurisdiction to include the Omaha division, succeeding F. Newell, who has been assigned to other duties. The position of master mechanic at Omaha has been abolished.

Engineering, Maintenance of Way and Signaling

Lawrence Spalding, assistant valuation engineer of the Bessemer & Lake Erie, with headquarters at Greenville, Pa.,

has been promoted to valuation engineer, with the same headquarters, a newly created position.

W. S. Burnett, district engineer of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Springfield, Ohio, has been promoted to engineer of construction, with headquarters at Indianapolis, Ind., a newly created position. He will take over the duties of A. M. Turner, district engineer at Indianapolis, who has resigned.

H. Horn has been appointed superintendent of track, buildings and bridges of the Alaska Railroad, with headquarters at Anchorage, Alaska. He will have general charge over all buildings, bridges, roadway and maintenance matters. The positions of chief engineer and engineer of maintenance and construction have been abolished and their duties assumed by **Lee H. Landis**, general manager.

Purchasing and Stores

L. Lavoie, purchasing agent of the Central region of the Canadian National, with headquarters at Toronto, Ont., has been promoted to general purchasing agent, with headquarters at Montreal, Que. **L. C. Thomson**, chief of stores, with headquarters at Montreal, has been promoted to manager of stores, with the same headquarters. **G. W. Caye**, purchasing agent, with headquarters at Montreal, has been appointed purchasing agent of the Grand Trunk Western lines, with headquarters at Detroit, Mich.

Special

J. R. King, whose promotion to secretary of the pension Board of the Chicago, Burlington & Quincy, with headquarters at Chicago, was reported in the *Railway Age* of April 19, was born on May 5, 1876, at Quincy, Ill. Mr. King entered railway service in July, 1894, as a messenger boy in the local freight office of the Chicago, Burlington & Quincy at Chicago, and later held various positions in the freight department. He was subsequently promoted to stenographer and served in that capacity in the various departments until July, 1904, when he was transferred to the office of the division freight agent as stenographer and clerk. In October, 1904, Mr. King was appointed file clerk in the office of the operating vice-president and he was later promoted to stenographer to the chief clerk. In February, 1910, he was transferred to the office of the president as file clerk and he held this position until November, 1912, when he was promoted to chief clerk to the president. During the period of federal control Mr. King was assigned to the office of the federal manager, handling reports to the railroad administration regarding capital expenditure. In March, 1920, he was assigned to special duties in the president's office and he held this position until January, 1922, when he was promoted to assistant secretary of the Pension Board. He continued in this capacity until his recent promotion to secretary of the Pension Board, with headquarters at Chicago.



J. R. King

Obituary

E. A. Bynum, vice-president and general manager of the Texas City Terminal, with headquarters at Texas City, Tex., died at Galveston, Tex., on April 15.

B. F. Bowes, formerly assistant general passenger agent of the St. Louis-San Francisco, who retired from active service in August, 1922, died in Low Point, Ill., on April 20.